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60 ALWAYS FALLING APART

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COVER: An alien with an enigmatic smile considers you, the reader. This interplanetary Mona Lisa courtesy Jim Burns.

ABOVE: An alien ship docking at the Babylon 5 outpost, one of two new television shows set aboard space stations this season. (Story, page 18).

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The exciting special effects of Ray Harryhausen are the real stars of this innovative movie. The Greek mythology of Jason's quest for the golden fleece comes to life. Who can forget the extraordinary effects that kept us at the edge of our seat and held us



completely in awe.

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EDITORIAL

By Scott Edelman

The world seems cosmic when seen through science fiction eyes.



The Twilight Zone's Rod Serling taught us that things are not always as they seem.

I WAS RAISED BY MY PARENTS, BUT I WAS SHAPED BY science fiction.

From my parents I received the central underpinnings of my soul—strong moral values (which don't always mean what the politicians would have us believe during this election year), an ethical attitude towards life, and a desire to always attempt to do the right thing.

But it was from science fiction that I learned other life lessons equally as valuable. With the words and pictures from science fiction comics, short stories, novels, movies and television I was taught many things.

When I was younger, and I was challenged about my liking of science fiction by others who wanted to put it down as mindless fluff about rockets and bug-eyed monsters, I never knew quite how to respond, but now that I am older, I find that I can now articulate some of the things that science fiction has given me.

The novels of Robert Heinlein, for example, taught me that one competent person could accomplish anything.

From Stan Lee and Marvel comics, I learned that with great power came great responsibility.

Rod Serling and his classic television series *The Twilight Zone* taught me that things were not always as they at first seemed, that there was indeed "a fifth dimension beyond that which is known to man."

From Ray Bradbury, I learned that there could be poetry in prose.

The short stories of Theodore Sturgeon (whose credo we have attempted to follow with this magazine)

showed me that love was nothing of which a man (or alien) had any reason to be ashamed.

The wit and bite of Harlan Ellison taught me that one never had to lose one's passion.

The original *Star Trek* series showed me a future of hope, one wherein humanity would pull itself back from the brink of nuclear insanity and somehow survive to a future in which the planet earth was more important than any single country's boundaries.

There was much more I learned from many others, and I beg forgiveness from those who I have had to slight here for reasons of space. But I'm sure that the examples above are enough to show you that the world is so much easier to understand when looked at through science fiction eyes.

Now, a whole new generation is being shaped by science fiction. And in addition to the original S.F. mockers, much like those who annoyed me when I was young, there are now those who are saying that S.F. is not what it used to be, and that the new generation of S.F. fans is getting the wrong message from, to take one example, movies stressing (or so the cynics say) explosions over emotions. Having been an S.F. consumer in one form or another for over three decades, I beg to disagree.

There are still good lessons to be learned out there, and science fiction is still teaching them.

New names may have come up to replace the old, and new shows to fill the slots of those long cancelled, but the lessons science fiction brings are still valuable ones worth hearing.

Turn on the TV, go to the movies, visit your local bookstore or library, and you'll see:

Yet another *Star Trek* has come forward, a new generation, to teach this new generation that we can, we will, we must all learn to live together. If androids and aliens can survive peaceably with humans, can't we humans learn to deal peacefully with just ourselves?

A hit show like *Quantum Leap* which teaches us that one man can make a difference, if we but try.

Or the short fiction of John Kessel, which tells us that life is valuable no matter how difficult it may be.

Science fiction is wonderful for the purpose of teaching these things, because its teachings occur in a very subversive way. While you're busy lost in the sense of wonder and excitement of it all, the message is being slipped to you between the lines.

Tell all this to the naysayers of science fiction, next time you run into one. They may not want to listen at first, but you'll know you have right on your side. Get them to read one of your favorite books, watch one of your favorite movies. Who knows, maybe even pick up one of your favorite—ahem—magazines.

So do what you can to win over one more convert to science fiction. It's amazing how different the world will look to them once they start seeing it with science fiction eyes.

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Dear Sir:

I have been reading and studying S.F. for 30 years and have looked for and hoped for a magazine like *Science Fiction Age* during those 30 years. I really enjoyed the first issue and have told many of my S.F. friends about it.

Sincerely,
Wesley O. Doughty

Dear Mr. Edelman:

Although I subscribe to other genre publications and never felt any lack due to the small size and black and white pulp pages, I particularly like the large format, glossy paper and full-color style of the magazine. Also, I think you're doing a great job of providing coverage of the whole science fiction scene, not just fiction (although that was excellent, too.).

Regards,
Wendy J. Fry

Dear Mr. Edelman:

I do not write commentary to magazines, nor do I contribute unsolicited editorials to newspapers. So what does all this have to do with *Science Fiction Age*? Simple—you got me! If your next issue is packed with as much excitement as the first, I'm ready to renew my subscription for a second year. In my opinion, *Science Fiction Age* sets a standard that other sci-fi magazines are still dreaming about.

Jan H. Brown

Thank you all for your strong support and kind wishes for our continued success. In the weeks following the release of our first issue, our mail box has been stuffed with letters similar to those above. We are particularly pleased that we have drawn fans from both of the worlds we are trying to reach—the hardcore, longtime s.f. fans, as well as the fringe fans for whom *Science Fiction Age* may be their first and only s.f. magazine. Welcome all!

Dear Editors:

It was with great joy that I pulled the premiere copy of *Science Fiction Age* from my mailbox. I have great expectations for this newest S.F. publication, and I sincerely look forward to watching you meet or exceed them during the coming months (years, centuries, millennia, etc.).

The caption "Tom Baker is Dr. Who" appears below the photograph of Jon Pertwee. To paraphrase my college logic professor, "GIVEN: 'Tom Baker is Dr. Who', and



The real Tom Baker as Dr. Who—with scarf.

'Jon Pertwee is Dr. Who,' DOES NOT YIELD 'Tom Baker is Jon Pertwee.'"

So it goes. At least you got your big oops that everybody can't help but notice out of the way early. The rest of the publication is as good as your pre-publication media promised.

Sincerely,
Eva Schwartz

You are but one of the many dozens of readers who got in touch with us to point out our

fewer ops. We worked from a caption provided by the photo house and realized the error ourselves as soon as we had the first printed copies in our hands.

Dear Editor:

Your title is *Science Fiction Age* and your editorial espouses this truth. Yet you're planning to feature fantasy also. Mistake—S.F. fans don't really want fantasy, else they'd request it. The time has come to separate the two genres to everyone's convenience. I'm tired of wading through fantasy trash to get to stimulating fiction.

David Kvergas

Dear Editor:

Let me say that fantasy is a growing area of *Science Fiction* which can't be ignored. I thoroughly enjoyed that section of your issue.

Thanks again for the wonderful issue,
Sam Ewing

Our mail on the premiere issue was evenly split on the controversial issue of S.F. versus fantasy. Some readers felt Resa Nelson's "The Dragonslayer's Sword" to be the best in the issue. Others felt that while, yes, that had been a good story, more science fiction would have been preferred. Unless a major consensus develops, we plan to continue showcasing one fantasy story per issue, as with this issue's "The Frog Wizard." We hope that all readers will make their feelings known so that we can keep *Science Fiction Age* the finest S.F. magazine on the market today.

Readers—please let us know how we're doing. While we can't publish or respond to every letter, all letters are read and taken into account as we create what we hope is the best S.F. magazine ever! Write to: Letters to the Editor, *Science Fiction Age*, P.O. Box 369, Damascus, MD 20872.

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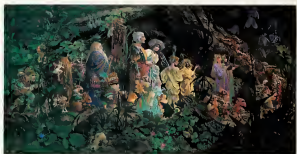


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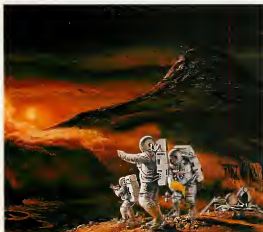
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BOOKS

By Michael Bishop

Kim Stanley Robinson strikes gold on the red planet Mars.



In the first volume of his new trilogy, Kim Stanley Robinson deftly explores Red Mars. Above, a NASA artist imagines those first steps. BELOW: Cover art by Don Dixon.

I HAVE ALWAYS ADMIRED THE WORK OF KIM STANLEY ROBINSON, but usually with the muted enthusiasm occasioned by sensitive and intelligent, but only mildly engaging, fictions. Indeed, despite their laudatory notices, I declined to read the last two volumes of his Orange County trilogy, *The Gold Coast* and *Pacific Edge*, because I stupidly assumed I had Robinson pegged and need not expect any liberating torques in his development—an attitude I would bitterly resent in any self-appointed judge of my own work.

Red Mars (Bantam Books, 1993, 528 pp., hardcover \$22.50; trade paperback, \$11.00) forcefully rebukes that attitude and provides both a sterling capstone to Robinson's career to date and a radiant index of accomplishments ahead. It is the best pure science fiction novel I have read in years, a book so full of credible human drama, technological savvy, breathtaking planetary scope, stunning historical sweep, and hard-nosed spiritual uplift that I regard it as the prologue of a brand-new Martian Chronicles. If Ray Bradbury owned the red planet from the early 1950s to the arrival of the Viking probes, Kim Stanley Robinson may well own it for the next quarter century or more.

Like all good epics, *Red Mars* begins in *medias res*—with the Machinellian

assassination of John Boone, famous as the first astronaut to set foot on Mars. Robinson then casts back two decades, to late 2026, to narrate from the perspective of Russian team leader Maya Taitovna the nine-month voyage out of the *Ares*, a vessel occupied by 100 scientists and technicians and one mysterious stowaway, later dubbed the Coyote. Other point-of-view characters include Nadia Cherneshevsky, an indefatigable engineer and troubleshooter; the homesick French psychologist Michel Duval, who defects to a hidden colony of landscape-worshipping sectarians; the doomed John Boone; Frank Chalmers, official leader of the American contingent, Boone's friend and foremost rival; and Ann Clayborne, the most vocal "red," or antiterraformer, among the first hundred. At least three other scientists—Arkady Bogdanov, Saxifrage Russell, and Hiroko Ai—evince a like authenticity, but Maya and the other five viewpoint characters come most fully alive and provide the sharpest lenses on the action.

After planetfall, *Red Mars* chronicles the inevitable taming and settlement of this new world—from the establishment of an underground headquarters, to the discovery of an effective anti-aging treatment, to the dropping of an immense "skyhook" from "aeroseynchronous" orbit. Up and down this structure, until its spectacular sabotage by militant Reds, move goods and new arrivals. Indeed, Robinson treats so lucidly so many leave explorations, engineering feats, political and economic conflicts, mind-boggling topographic phenomena, and manmade or natural disasters that I began to imagine him keyboarding the relevant particulars from a continuous 21st-century CNN feed. The illusion of a multifaceted reality takes root early and grows without letup.

In John Boone's section of the novel, Nadia Cherneshevsky shows John around the domed interior of Rabe Crater. "It was quite a tour," he thinks. Indeed, "It was quite a tour" would be an accurate summation of *Red Mars*. In a letter to me, Bruce Sterling once wryly referred to a novel of his as a glorified

"grommet-factory tour." Here, Robinson takes advantage of the historical aerial mapping of Mars—with its shield volcanoes and canyons, its splosh craters and polar ice caps—to give hue and plausibility to his characters' travels. Repeatedly, the observable landscapes of Mars rear up to amaze or dumbfound us, steeping us in wonder. Moreover, instances of human duplicity, courage, and ingenuity fill the book, turning what might have been only a grommet-factory tour on a planetary scale into a bona fide—indeed, an exemplary—novel.



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"Red Mars covers about the first 40 years of colonization," Robinson told Charles N. Brown in an interview for *Locust*. "The tension comes from two different directions, one environmental and the other political." The environmental concern pits those who wish to make Mars Earthlike quickly, or Greens, against Mars-Firsters, or Reds, who see terraforming as an unrectifiable insult to the uniqueness of the planet. The political concern, just as volatile, suggests that a stable Martian colony cannot arise if Earth itself is rushing headlong toward catastrophe. Robinson docks none of the hard questions attending the issues, and neither do his stolid or wranglesome characters.

My favorite among these characters, by the way, is Nadia. Robinson obviously likes her a great deal, too, for she serves as his viewpoint character in two of the novel's eight major sections. She solves problems rather than causing them, builds rather than destroys, and views ideologies as secondary to the task of hands-on survival. Amid the feuds of her colleagues and the stupidities of humanity at large, this "plump tough muscular short woman" stands as a bulwark. Seeing the mushroom clouds resulting from the breakup of the moon Phobos and its bombardment of Mars, she muses, "How was it that destruction could be so beautiful? Was there something in the scale of it? Was there some shadow in people, lust for it? Or was it just a coincidental combination of the elements, the final proof that beauty has no moral dimension?" Nadia, like any other person of goodwill and sense, cannot riddle this enigma, but, to her credit, she extinguishes it as soon as possible in strenuous, goal-directed work.

In addition to meticulous world-building and the admirable sweep of its storytelling, *Red Mars* features dozens of clever, but apt, narrative filips. Because a day on Mars is about 40 minutes longer than Earth's 24-hour day, the colonists insert a gap of that length between midnight and 12:00:01 a.m., a correction known as (*ta-DUM!*) the Martian timeslip. Michel Duval, shrink to the first 100, providentially reinvents the Empedoclean science of the humors to categorize his fellow colonists as "choleric," "phlegmatic," and so on. John Boote whirls unthinkingly in the whirl of a protracted Martian dust storm with a group of Qadartite Sufi dervishes. Transnational corporations usurp the roles of countries in the United Nations and turn the skyhook into a private freight elevator. "Lincoln is dead," Frank Chalmers tells a rebel prisoner looking for a political messiah. "And historical analogy is the last refuge of people who can't grasp the current situation." On every page, then, *Red Mars* bursts with riches.

Ordinarily, I abhor sequels. Robinson, however, is at work on a continuation of his story, a book titled *Green Mars*, which

itself will have a successor chronicle called *Blue Mars*. "It's basically one novel that's been split up into three parts," he has said, "so it's a trilogy in the old sense of the Victorian three-decker." This strategy I can approve, and Robinson's subject matter, as *Red Mars* so vividly demonstrates, warrants such a treatment. If the next two installments attain the quality of *Red Mars*—and why shouldn't they?—this ambitious series may well come to stand as the *War and Peace* of science fiction extravaganzas.

Meanwhile, repentantly, I have begun to read *Pacific Edge*. Repentantly, I intend to work my way back through Kim Stanley Robinson's entire canon.

Kalifornia, by Marc Laidlaw, St. Martin's Press, 1993, 245 pp., hardcover, \$18.95

Way back around 1969, Ron Goulart was the funniest writer in S.F.

Goulart had a clinician's finger on the Zeitgeist's pulse and wasn't afraid to wield a scalpel-sharp wit on the patient. Whether he was writing about a Balkanized future America or a more exotic locale such as his Barnum System, he was really satirizing contemporary mores and foibles, roasting bohemian poseurs and middle-class post-lost Puritans alike. His "heroes" were incompetent nebbishes surrounded by scheming greedheads and bureaucrats, abetted by neurotic human-animal hybrids, in a milieu of technology spiraling hilariously out of control. S.F. had never seen a scenario quite like his.

But over the years, something happened to render Goulart's fiction a little less edgy and funny. It was a simple thing, predictable but unavoidable.

The real world caught up with—and surpassed—Goulart's art.

In a world of heiresses-turned-revolutionaries, transvestite-inspired dance crazes and actor-presidents, Goulart seemed to lose the ability to conjure up anything larger than the taken-for-granted insanity around him. The S.F. field—and the world at large—was crying out for the pinprick of satire, but no one seemed able to provide it.

Until now. With the publication of his third novel, *Kalifornia*, Marc Laidlaw has assumed the laurels worn so nobly by Goulart, a crown whose heritage goes straight back to Waugh, Swift and Aristophanes. This is satire for the '90s, cognizant of every latest excess and stupidity.

Kalifornia represents a return to the mode Laidlaw employed in his first book, *Dad's Nuke* (The intervening work, *Neon Lotus*, was an interesting excursion into Tibetan-techno mysticism.) But whereas the satire in the first book was bludgeoning at times—effective but subtle as an axe—the sly craft exhibited in *Kalifornia* is deft as a stiletto: you hardly feel the blade slip in before you die laughing.

Laidlaw's future *Kalifornia* is a state whose populace is literally "wired": each

man, woman and child is equipped with a set of "poly-nerves" capable of continuous media reception, hundreds of channels flooding into one's mind at whim.

A subset of the population—the stars—are senders as well as receivers, broadcasting their every sensory experience. Through them and their shows, the masses live out their fantasies. Laidlaw's main protagonists are drawn from this exclusive subset, specifically from among the Figueroa family, a futuristic Brady Bunch/Partridge Family/Kathy Klan/Loud Family on the skirts.

The plot of *Kalifornia* starts in high gear on page one and never falters, providing the perfect vehicle for Laidlaw to roam through his milieu. Poppy Figueroa's baby—a child unique in that it was born sending—is kidnapped, a pawn in a plot for world domination which, by book's end,

The plot starts in high gear on page one and never falters.

culminates in a gaudy climax. (I challenge you to guess the real villain before Laidlaw reveals his/her identity.)

Laidlaw's genius is evident in several areas, not the least of which is how he has literally internalized the by-now familiar notion of cyberspace. By dispersing his "consensual reality" among the bodies of billions of citizens of his world, Laidlaw makes the notion of the loss of identity and free will involved more immediate and dramatic. Twisting relatively new notions even further—usually in the direction of complete irreverence—could be a Laidlaw trademark.

The language of *Kalifornia* reflects this urge in a continuing parade of astonishing images and phrases. The best S.F. has always been adept at giving a jolt by producing sentences which, taken out of context, sound like utter Jaberwocky, yet which make perfect sense in the imagined

BOOKS TO WATCH FOR

Paths of Fire, by Charles Ingrid (DAW) Ever since *Radius of Doubt* appeared last year, fans have been wondering what was going to be next in store for the telepathic team of the alien spaceship pilot Calaton and the human Rand. This second book in Ingrid's "Patterns of Chaos" series will answer every question.

They Fly at Ciron, by Samuel R. Delany (Incunabula) The award-winning author says he's spent 30 years writing his latest novel. We think it's worth the wait and recommend that you make up for lost time by tracking it down.

The Selected Letters of Philip K. Dick: 1975-1976 (Underwood-Miller) These letters by the first of the great gonzo S.F. writers show us that not only did Phil Dick write science fiction, he lived science fiction.

Logan: A Trilogy, by William F. Nolan (Dell) Back when Abbie Hoffman was telling America not to trust anyone over 30, Logan's Run mirrored the mood of the country. Now, Logan has returned to entertain yet another younger generation.

Stormbringer, by Michael Moorcock (Ace) In the great sword and sorcery wars, the only hero who could possibly dethrone Conan the Barbarian is Elric of Melniboné, now back in print. May the albino warrior and his soul-stealing sword seduce yet another set of S&S enthusiasts.

Meeting in Infinity, by John Kessel (Arkham House) Kessel's first collection

is worth the price of admission for his short story "Buffalo" alone, a moving tale which won the Theodore Sturgeon Memorial Award for Best Short Story of 1992. You should badge your bookseller for this one.

Lucifer Jones, by Mike Resnick (Warner Questar) For years, Resnick has been penning valentines to pulp novels and B-movies in the form of stories featuring the adventuring con man Lucifer Jones. Now comes a novel, sure to bring back memories of Lorde, Greenstreet, and Saturday matinees.

Jules Verne: The Man Who Invented Tomorrow, by Peggy Testers (Walker) The only ones who will quibble with the claim made by the title of this young adult biography will be partisans of H. G. Wells. Regardless of which of those two spiritual ancestors has your vote as the catalyst of modern S.F., this book makes a good intro to how it all began.

Tek Vengeance, by William Shatner (Putnam) Captain Kirk's step down from the bridge certainly didn't mean his departure from S.F., as this latest adventure of Jake Gardigan proves. This series has already spawned a Marvel comic book. Can another Shatner TV show be far behind?

Fallen Angels, by Larry Niven, Jerry Pournelle, and Michael Flynn (Baen) This hard S.F. trio posits a future that any fan has to love—science fiction fans save the Earth! We could have told you that. See if you can identify the thinly disguised S.F. personalities who populate this one.

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universe. Laidlaw is a master of this. "Bad media lurked in his polynerves like an Alzheimer's prison, waiting to crystallize." "Sandy and the sealman strolled across a lawn of spongy dichondra that gave off unpredictable odors when crushed underfoot." "The fine sheen of gilt tended to flake off in one's hand, filling the streets and powdering clothes with polychromatic dandruff. . . . In a windstorm, the LA Basin resembled a decorative paperweight—shaken, not stirred." Neologisms such as "cogoodle," "quondo," and "habimall" contribute further to the Wonderland atmosphere, as do many sly allusions to such icons as "Bob" and Valis.

Laidlaw's characters—especially the humanimal figure of Cornelius the sealman, loyal retainer to the Figueroa family—are sturdy and individualistic enough to bear what is demanded of them by the widescreen satiric impulses of the book. Like the stock figures of Italian *commedia dell'arte*, they exist mainly to counterpoint the ridiculousness of conventional society.

Italo Calvino once characterized the best fiction as possessing an inherent "lightness," the quality of floating along untrammelled by the weight of its own construction, however weighty its cargo of ideas.

Kalifornia floats like a butterfly, but stings like a transgenic bee.

Paul Di Filippo

Castle of Days, by Gene Wolfe, Tor Books, 1992, 448 pages, hardcover, \$22.95.

Before Gene Wolfe amassed both popular and critical acclaim as the author of the Books of the New Sun, he was known primarily as a short story writer who, with surprising regularity managed to produce polished treasures. Stories such as the quirky "The Island of Doctor Death and Other Stories" were beloved by many of his peers, but fan recognition seemed to escape him.

In what may be an apocryphal story, Wolfe started working on his novel *The Shadow of the Torturer*, which began the series that was to lock in his fame, while seated at a World Science Fiction Convention masquerade. Watching the costumed fans walk by, he bemoaned the fact that no fans ever dressed up as characters out of his stories. Thus was born the black-garbed Severian the torturer.

Today, now that Wolfe is about to begin publication of his new tetralogy, it is useful to cast a look on the short fiction which is the foundation of Wolfe's talents. *Castle of Days*, his newest short story and essay collection, helps us do just that.

The book is composed of three sections. The first part, titled "Gene Wolfe's Book of Days," features a series of short stories written for each of the holidays of the year, all the way from Lincoln's Birthday to New Year's Eve. Mother's Day, Armistice Day and Arbor Day are included as well, each

accompanied by a fantastic story that strangely suits the theme. Father's Day is represented by "The Adopted Father," for example, in which a lonely dweller in the gritty urban world of the future seeks not to adopt a child, but to find 40 children to adopt *him*. Wolfe has chosen an unusual way to organize this part of the book, but on contemplation it appears to be poetically apt.

"The Castle of The Otter," the book's second section, is made up of essays in which Wolfe explains the background of his most famous series. The odd title for this section comes from a reporting error made by a fanzine which referred to one of the then-forthcoming novels in the series by that title instead of the correct *The Citadel of the Antarch*.

One of the most interesting essays here is "Here Are The Jokes," which Wolfe was prompted to write after a conversation he had in which his son complained that the long multi-part novel lacked humor. Wolfe then wrote a series of jokes as if told by each of the main characters, in their own distinctive voices. Other essays cover the naming of characters and the use of archaic language.

The final third of the volume is titled "Castle of Days," and consists of non-fiction pieces on other important authors such as Algis Budrys, Nancy Kress and R.A. Lafferty. Wolfe has also excerpted his own letters to other writers in which he explains his craft. He also mocks the self-importance of writers in a series of self-interviews, as in the one where he explains how a novel comes about: "You write a lot. When the pile of manuscript threatens to fall over, that's a book."

Ursula K. LeGuin has written that "Wolfe is our own Melville," but to me, Gene Wolfe instead appears to be science fiction's Vladimir Nabokov, with stories that evidence a playful but masterful use of the language, a respect for the reader, and an ability to hypnotize with his expertly crafted pacing.

Surprisingly for one whose texts have so often reached the level of art, Gene Wolfe is by day the senior editor of the technical journal *Plant Engineering*, dealing with hydraulic pumps and electric drills. By some grand miracle, the Fates have allowed that the rest of the time he can be ours, and we should all show our gratitude by buying this multi-talented author's book.

But the final judgement of his work is not left to reviewers such as myself, but to you the reader. As Wolfe himself writes in his introduction:

"You cannot judge this book now. You will not even be able to judge it rightly when you have read its last story. Ten (or twenty) years from now will know it was a good book if you remember any of the tales you are about to read."

Wolfe is right in his instructions as to the proper way to judge a book. And in years to come, many of this tales will surely still be alive in your memory.

Amy Tremling

RECENT AND RECOMMENDED

Long-time book packager Byron Preiss recently had twin hits with his anthologies *The Ultimate Frankenstein* and *The Ultimate Werewolf*, which though horror-themed, featured quality stories by many S.F. greats, including Harlan Ellison and Fritz Leiber. Now it seems as if Preiss is making a bid to become the ultimate editor, for he has just teamed up with Robert Silverberg to release *The Ultimate Dinosaur* (Bantam Spectra, hardcover, \$35.00). The creative format for the lavishly illustrated book is excellent. They have assembled the world's top scientists and the leading S.F. writers of our day and set them loose on the central issues surrounding the mysterious days of the dinosaurs. An essay on dinosaur migration by Philip Currie, head of dinosaur research at the Royal Tyrrell Museum of Paleontology, for example, is followed up by Michael Bishop's short story "Herding With the Hadrosaurs." Top artists such as William Stout, Bob Eggleton, and Wayne Barlowe help bring the beasts back alive.

Mike Resnick invites S.F. readers within the twisted brains of the inventors of their favorite fantasies. Once you step *inside the Penhouse* (Avon Nova, \$4.99, 246 pages), you will see that the world-builders are just as weird as the worlds they build. "Recursive" science fiction is science fiction about science fiction, and Resnick manages to find some of the best examples of this intriguing sub-genre. Acting as bookends to works by Isaac Asimov, Philip K. Dick, and Frederik Pohl are two classics by Barry Malzberg, "A Galaxy Called Rome" and "Corridors." Any publishing project which once more presents "Corridors" to infect a new and unsuspecting generation of S.F. readers is a cause for celebration. Pick this one up to remember what it is we talk about when we talk about S.F.

What started as science fiction's one-shot high-concept homage to comic book super heroes and super villains in the real world is now becoming very much of a grand tradition of its own as the 11th volume of the *Wild Cards* series arrives in bookstores. This latest playful mosaic novel—titled *Dealer's Choice* (Bantam Spectra, \$5.99, 448 pages)—is still ably edited by George R.R. Martin, with pieces of the puzzle contributed by regulars Edward Bryant, Walter Jon Williams and others. If you have any fondness for those caped crusaders of your youth, tune in and see what the 90s have made of those beneath the masks.

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100 books, winner of the World Fantasy Award, and past president of the Science Fiction Writers of America. Yolen wanted the first volume of *Naxosdu* (Tor Books, hardcover, \$21.95) to stir up the same magical, dreamlike mood as the Coleridge poem from which she has borrowed her title, and she has for the most part succeeded. *Naxosdu* showcases stories from the top talents in the field, including Ursula K. Le Guin, Tanith Lee, Lisa Tuttle and Nancy Kress (the latter of whom just won a Hugo Award at the most recent World S.F. Convention). Fantasy fans will love it, and S.F. fans should stick their toes in the water to see what their favorite authors do when playing by a different set of rules.

With the second *Star Trek* series having outlasted the first, it's about time for a book that would take an exhaustive look at *Star Trek: The Next Generation*, minding the minutiae of the reborn show for *Trek* trivia fanatics. Larry Nemecek has done just that with his exhaustive *The Star Trek: The Next Generation Companion* (Pocket Books, trade paperback, \$13.00). Nothing appears to have been missed. Historian Nemecek covers the first five seasons in-depth with complete plot summaries and credits for each episode, as well as behind-the-scenes details on the production of the show. The book is illustrated with over 150 black and white photos of cast and crew.

The publishing firm of Donald M. Grant continues to bring us treasures that no one else can. As proof, this purveyor of fine limited editions recently brought out a boxed set of two collaborative works by Roger Zelazny and Vaughn Bode that have for two decades sought the light of day and the eager eyes of fans of fine science fiction and fantasy. The word delightful has been overused recommending books, but the word is apt here. The two short tales which make up this pair of fantasies are each written by Roger Zelazny, renowned for his *Amber* series of novels, and illustrated by the late Vaughn Bode, creator of the cult underground character Cheech Wizard. At the moment, *Here There Be Dragons* and *Way Up High* are available only in a limited edition of one thousand copies signed by the author at a price of \$80.00, but we understand that a trade edition is in the offing.

Here There Be Dragons is the story of a unfortunate cartographer who finds out what happens when he proves to be a bit too eager to label the unexplored portions of his country with the familiar warning of the title. *Way Up High* is the tale of a young girl who meets up with a pterodactyl during a summer which she'll never forget. Each is suitable for children and at the same time meaningful for adults.

These two stories are the result of a chance meeting between the creators, back in the early '70s when Zelazny was the president of the Science Fiction Writers of America and Bode was an artist hoping to

gain membership. Admirers of each other's work, they decided that this project would be the perfect melding of Zelazny's lyricism and Bode's reptilian sensuality. Fate had prevented the final product from reaching a readership, but now it's time to see for yourself how right they were. To obtain your copies of this boxed set, contact finer booksellers or the publisher direct.

Science fiction, generally thought of as an American art form is being transformed by the newest generation of S.F. writers from the UK. Kim Newman, whose earlier novel *The Night Mayor* mixed the genres of S.F., detective story, film noir, and alternate history into a dazzling intellectual puzzle that managed to be fun as well, is an important part of that transformation. He brings to his work a degree of wit which, when attempted by many Americans, often turns out to be merely bad puns and silly names.

Newman's latest novel *Jago* (Carroll & Graf, hardcover, \$36 pages, \$22) promises to once more take S.F. readers by storm. It includes enough ingredients to be satisfying to both schools without alienating either. *Jago* is the Reverend Anthony William Jago, a cult leader who early on in the novel is compared to a cross between L. Ron Hubbard and Jim Jones, who runs an annual religious festival that turns out to be far more than it seems. Newman's exploration of exactly what *Jago's* followers are trying to do brings in everything from shapeshifters to the famous tripolar Martian war machines of H.G. Wells. Newman is working in a new hybrid genre here, and following in the footsteps of the bestselling American genre blender of horror and SF, may very well soon prove to be hailed as the British Dean R. Koontz.

Paper Tiger Books, a British publishing company, has been putting out beautiful art books collecting the life's work of the top science fiction and fantasy illustrators. The Avery Publishing Group has started importing and distributing these books in the United States. All of the following are trade paperbacks with cover list prices of \$18.95.

In The Garden of Earthly Delights (100 color illustrations) focuses on the work of Josh Kirby, who is a veteran in the field of S.F. illustration for over 30 years. He has happily gotten some recognition in the field recently for his lush covers on the Terry Pratchett Discworld series, all of which are collected here, as well as his covers for the novels of Ron Goulart and Robert Silverberg.

Dreamlands (94 color illustrations) is the first book featuring the work of Mark Harrison, who has illustrated authors as diverse as Sheri Tepper and P.D. James, and whose paintings range from subjects sensual to horrifying. Text in this volume is by expatriate S.F. short story star Lisa Tuttle.

The Fantasy Art Techniques of Tim Hildebrandt (80 color and 40 black and white illustrations) covers the craft of the man who painted the original poster for

the movie *Star Wars* as well as the book cover of the first post-Tolkien fantasy hit, *The Sword of Shannara*. Many of the paintings are shown in various stages of completion to give an idea of how an artist creates. This volume also features a foreword by Boris Vallejo and an afterword by Alan Dean Foster.

Ultraterranium (100 color illustrations) is a retrospective of the 30 year career of Bruce Pennington, whose works range from science fiction to gothic horror to fantasy. This volume includes his illustrations for the works of Robert Heinlein, Frank Herbert, Gene Wolfe and Philip Jose Farmer.



From *Ultraterranium*, Bruce Pennington's cover art for *The Man in the Maze*, by Robert Silverberg (Star Books, 1981).

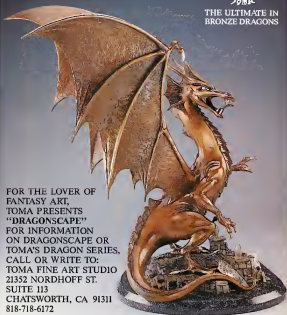
Picking up one or all of these books will turn your home into a science fiction art museum. The Avery Publishing Group should be thanked for its work in giving these titles the wider audience they deserve.

Norman Spinrad has long been writing ground-breaking science fiction designed to make the reader think. Sometimes, unfortunately, exactly what the readers think has been a exact blessing for him. While Spinrad has met with critical success within the S.F. field, the sort of fame he has been granted in the larger world outside is another matter. His S.F. novel about Hitler, *The Iron Dream*, was banned in Germany for seven years, and *Bug Jack Barron*, his novel about the power of television, was denounced on the floor of the British Parliament. Unbowed by this uninformed misreading of his work, Spinrad now turns his attention to religion, with *Dross X* (Bantam Spectra, paperback, \$3.50), populated by a cast of characters that includes Satan and the first female Pope. We don't know what kind of interpretation the mainstream media critics will make of Spinrad's newest work, but we recommend you pick it up so you'll know what everyone is talking about should the hullabaloo start happening. □

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TELEVISION

By Eric Niderost

New series *Babylon 5* hopes to bring more S.F. wizardry to television.

Security Chief Michael Garibaldi (Jerry Doyle), on left, and Commander Jeffery Sinclair (Michael O'Hare) stand ready in *Babylon 5*, the new Warner Bros. Television two-hour special that airs February, 1993 on The Prime Time Network.



TELEVISION CAN BE AN UNFORGIVING MEDIUM, A giant maw that sucks the creative juices out of many a promising concept. Science fiction can be particularly hard to produce, because of potential cost overruns. Network executives are too often concerned with the bottom line, not the story line.

Science fiction writer/producer J. Michael Straczynski has managed to overcome the odds with *Babylon 5*, debuting in early 1993 with *The Gathering*, its two-hour pilot movie, as part of the new Warner Brothers Television Consortium. If successful, *Babylon 5* will likely join *Deep Space Nine* (the *Star Trek: The Next Generation* spin-off) as a new S.F. series scheduled to begin this winter.

Straczynski is an S.F. novelist (*Otherside*) who's no stranger to the inner workings of television. He's been a frequent scriptwriter and story editor for such series as *The Twilight Zone*, as well as a producer. Before the advent of *Babylon 5*, he was writer/producer for the hit Angela Lansbury whodunit, *Murder, She Wrote*. Yet even for a writer of Straczynski's expertise, it took a lot of time and effort for his project to reach the video screen.

As *Babylon 5*'s creator, Straczynski suffered through a five-year gestation period before a deal was struck and the series became a reality. More than once, it seemed *Babylon 5* would be stillborn, despite its creator's skill in video "midwifery." Finally, Warner

Bros. announced the formation of the Warner Bros. Television Consortium, a group of television stations spread across the country. *Babylon 5* will be a staple in the Consortium's 1993 lineup.

Speaking from his Southern California office, Straczynski is enthusiastic about *Babylon 5*'s birth and is eager to share his feelings about this new S.F. offering.

According to its creator, *Babylon 5* will be something new in the S.F. universe in more ways than one, offering never before seen state-of-the-art visual effects. The story begins on a fairly conventional note, however. When the two-hour pilot opens, it's the year 2257 A.D., some 10 years after a major intergalactic war between the Earth Alliance and an alien civilization called the Minbari Federation.

"During the course of that war," Straczynski begins, "the earth was getting its butt kicked! We were losing badly. But suddenly, the Minbari surrendered, and no one knows why. It's a mystery why they surrendered on the very cusp of victory."

"To prevent such a war from happening again, the *Babylon 5* Space Station project is conceived. It's a port of call, a place for commerce and business, a space station, and neutral territory between the five participating governments, one human, the others alien."

In effect, then, *Babylon 5* is a kind of social laboratory of intergalactic amity and cooperation, a place where different civilizations can interact and settle their differences without resorting to war. But persons—or beings—unknown apparently aren't won over to the concept of peace.

"The station is called *Babylon 5*," Straczynski confides, "because the other four previous stations were sabotaged. The first three *Babylons* were sabotaged during construction and destroyed. Cause unknown. *Babylon 4* vanished without a trace, one day after becoming operational. It just blinked out of existence. *Babylon 5* has been operational about a year."

The central character of both the pilot and the series is Jeffrey Sinclair, commander of *Babylon 5* and a kind of Earth ambassador as well. Sinclair was a fighter pilot during the Minbari-Earth war, and he narrowly escaped death. There's some tension aboard due to his dual responsibilities as diplomat and commander.

Other human characters include Lieutenant Commander Laurel Takashima, a kind of executive officer who oversees the day-to-day operations of the space station. There's also a security chief, Michael Garibaldi, and black scientist Dr. Benjamin Kyle.

Before discussing some of the other characters and the casting, Straczynski reveals that S.F. fans had some input on the developing show. Cliché or not, Straczynski began *Babylon 5* in part because he wanted to do something he'd want to see on TV. For all its trials, tribulations, and disappointments, the five-year wait for *Babylon 5* to become a reality was well spent.

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"I went to S.F. conventions all over the country during that time," he elaborates, "and got myself on panels with the theme, 'Why Can't They (Hollywood) Do It Right?' I've listened to what the fans have to say. They mention things like, 'Why can't we have more non-humanoid aliens? Why can't we see uniforms that look like uniforms, and have pockets?' And why can't we have a show where the kid isn't saving the ship all the time?" I've listened to these comments."

Of course, the main reason why most S.F. shows don't have many non-humanoid aliens is that their actors come in only one type, *homo sapiens*. It's much easier to lard on makeup and prosthetics over a basically human form. Creatures can be created, but cable-operated puppets and other such special effects wizardry come with their own set of problems and costs.

Nevertheless, many of Straczynski's recurring characters will be aliens, humanoid or otherwise. Four major alien governments have ambassadors on *Babylon 5*. There's the Minbari, of course, contestants in the late war. There's also the Narn, the Vorlon, and the Centauri, the latter hailing from Alpha Centauri.

"Luckily," the writer/creator notes, "four of the major worlds are oxygen breathers, although we will have ambassadors from non-aligned worlds that need other requirements. There will be segments of *Babylon 5* that are designed to meet those requirements."

It's said that the late Gene Roddenberry's "sell-line"—the hook that got network execs interested—was describing his then-new *Star Trek* concept as "Captain Horatio Hornblower in space," alluding to the famous series of adventure novels set in the Napoleonic Wars. For Straczynski, *Babylon 5* is "Casablanca in space," a place where all kinds of beings intermingle.

Because of this volatile mix of cultures and passions, *Babylon 5* won't have to go out and "gallop through the galaxies" in search of adventure like both the old and new *Trek*. Not that all stories will be confined to the space station; Straczynski promises some excursions into the void.

Though they're aliens, the ambassadors will strike a responsive chord with most viewers, since they will be almost human in their problems and peccadilloes. "Ambassador Londo of the Centauri Republic," explains his creator, "is both a comic figure and a tragic figure. He has a gambling problem, a woman problem, and a drinking problem." By accident or design, the Centauri are the most humanoid of the aliens.

But probably the most enigmatic of the aliens is Kosh, ambassador from the Vorlon Empire. In fact, the pilot movie revolves around Kosh's arrival at *Babylon 5* and the complications that ensue because of that visit. It seems someone is trying to kill the Vorlon diplomat.



Space station *Babylon 5* is neutral territory for five governments—one human, the others alien. Computer visual by Ron Thornton and Foundation Imaging.

"What's curious about the Vorlons," Straczynski hints, "is that no human has ever seen one. We've sent expeditions into their segment of space, but they've all met with 'unfortunate accidents.' Finally, one of them is going to arrive on *Babylon 5*, and there's a great deal of curiosity about him."

"But when he arrives, we find we can't see him. He has different atmosphere requirements and so is completely encased

in a suit. We can't see inside. But the design of the suit is so bizarre, so alien, we wonder just what it does look like."

Casting a new show always is a challenge, but Straczynski insisted on relative unknowns from the very start. His reasons had little to do with the budget. "In fact," he reveals, "we had a number of name actors who came to us and wanted to do the show. It was tempting, but we wanted

STAR TREK'S NEXT GENERATION OF F/X

Twenty-six years after the wonders of *Star Trek* were first unleashed upon a television audience hungry to join the crew of the USS *Enterprise* on their five year mission, new wonders keep unfolding. Not only has the sixth season of *Star Trek: The Next Generation* arrived upon us at warp speed with new advances in special effects, but the tree of *Trek* has grown yet another branch, with *Star Trek: Deep Space Nine* being readied for its January 1993 premiere.

Dan Curry, fresh from winning an Emmy Award for his visual effects on "A Matter of Time", an episode seen as part of the fifth season of *Star Trek: The Next Generation*, took time out from his own busy schedule to talk to *Science Fiction Age* about his upcoming plans. Curry, the Senior Visual Effects Supervisor, has been heavily involved with the show since its birth in 1987. It is his responsibility to create the images which confront Captain Jean-Luc Picard and his crew on their mission.

"For me, the series is greater than the sum of its parts," said Curry. "It has a worldwide cultural and philosophical influence that is larger than any one



episode. I think it's a very positive vision of a future under control."

Curry gave us a sneak peek at some of those visions which will soon manifest themselves on your television screens. Of particular

interest to *Trek* fans will be the episode titled "Relics," which features a special guest appearance by Scotty (James Doohan), from the original *Star Trek* series.

"During the show," Curry told SFA, "Scotty wants to see the original *Enterprise*'s bridge. So he summons it up on the Holodeck. We found a background scene of an empty bridge from the original series. After shooting James in front of a blue screen, we composited him into the sequence. The end result brings across the illusion that Scotty is standing on the original bridge. In addition, Art Director Richard James built a small section of the old bridge for tighter shots of conversation between Scotty and Captain Picard."

The same episode will also feature breath-taking footage of the Dyson Sphere, an effect meant to replicate a device two hundred million miles in diameter that was built around the sun of a now vanished alien race. This race was at one time able to exist on the

to have an ensemble of people who were more-or-less on the same level. We didn't want anyone to be bringing 'baggage' with him."

The pivotal part of Jeffrey Sinclair is essayed by Michael O'Hare. Much of his experience stems from the New York stage, but he has a number of television dramas to his credit, including the movie *Rage of Angels*. The role of Lt. Commander Laurel Takashima may seem a kind of politically correct double header—a woman and an ethnic minority. But the author says there's more to it than that.

Comments the writer, "I've always wanted to have a female second-in-command, or even first-in-command. But while *Babylon 5* was being developed, I was disturbed by the amount of Japan-bashing that was going on. I thought I'd combine the two—woman and an Asian! Lt. Cmdr. Takashima is played by Tamlyn Tomita, who was so wonderful in the movie *Come See the Paradise*."

But when all is said and done, why should S.F. fans bother to turn *Babylon 5* on? What has *Babylon 5* got to offer that's different from, say, *Star Trek: The Next Generation* or other shows from recent years?

"To begin with," Straczynski details, "*Babylon 5* is a saga. Very often, S.F. shows

lurch from episode to episode. And there isn't a comprehensive view—a larger story that they're trying to tell. *Babylon 5* is a five year story, with a beginning, a middle and an end. Over time, a larger story will emerge. We start with the story of Jeff Sinclair; what has happened to him in the past, and what will happen to him in the future."

But by the same token, *Babylon 5* episodes will each stand on their own. I loved *Tein Peaks*, though it did go a little over the top toward the end. But if you missed one episode of the show, you were screwed!"

Another thing that makes *Babylon 5* worth watching is that it offers "a whole different 'take' on the future. When they do *Star Trek: The Next Generation*, they know how the doors opened, how the guns work, how the ship works, and everything. They've built on what has gone on before, with the old *Trek* series."

"We've had only one S.F. universe to 'play' in for 25 years, and that's the *Star Trek* universe. Oh, *The Next Generation* has added a few new things; the Borg, and so on. But it's still the same basic universe. You still have the Federation, the Romulans, the

According to its creator, Babylon 5 will be something new in the S.F. universe.

Klingons, and so on. But when we began *Babylon 5*, we had to start from the ground up and build a new future, just like Roddenberry had to do in the original *Trek*. This is the first new universe in 25 years."

Straczynski also wants to take a different, more adult approach to S.F. "The unofficial motto of *Babylon 5*," he reveals, "is no kids or cute robots, ever! We're trying to do a show for adults. I don't know if we'll ever have robots on the show; it's something we'll have to resolve. And we're not going to have a 'planet of the week' format, like they did on *Space: 1999* and *Battlestar Galactica*."

There was a fresh approach to casting as well. "Our main requirement as far as the cast was concerned," he declares, "was that we didn't want pretty boys or bimbo! We wanted actors with character in their faces, people who you'd believe in these roles. *Babylon 5* is an ensemble piece, and the actors work well together."

But *Babylon 5*'s biggest draw will be its unique visual effects, visuals the writer/producer maintains may well change the face of television. "The effects on this

Continued on page 65

habitable terrain of the sphere's inner surface by achieving maximum utilization of the sun's solar energy. Diverse hands were required to pull off the massive effect, and Curry made sure to give credit to his crew for the many accomplishments: "A large model was constructed by Greg Jain, while David Stipes supervised the design, photography and compositing of the shots. Additionally, Eric Chauvin gave us a matte painting of the sphere's interior."

Curry gives us some sneak previews of the forthcoming episode directed by Patrick Stewart.

"It's a great episode," said Curry. "Not only did Patrick do a terrific job with directing, but the cast gave excellent performances. It's going to be a very special episode in which some crew members experience an old West adventure on the Holodeck."

Of this episode, titled "A Fistful of Datas," Curry goes on to say that "besides creating forcefields, we did some shots which allowed Holodeck people to appear and disappear. Brent Spiner is playing various roles as Data in different forms. We'll be using split screen and blue screen photography so that Brent can appear twice in the same frame. We'll also be returning the Holodeck to its stripped format. To do that, we record all of our camera angles before shooting the scene with the



To avoid repetition, "we try never to use the same technique twice," says Curry.

actors. Everybody in the foreground remains in position while the background changes from illusion to Holodeck."

From the small robots which will populate the episode titled "The Quality of Life" to the worm-like creature existing in the plasma state of the transporter beams in "Realm of Fear" to the interdimensional alien abductors of "Schism," Curry has once more crafted a season fit to delight S.F. fans and special effects devotees everywhere.

The announcement of yet another *Star Trek* spinoff has all *Trek* fans anxiously awaiting the new year. *Star Trek: Deep Space Nine* will follow the adventures of a team of Starfleet officers who take command of a remote alien space station on the edge of a new

frontier. The space station is located near the mouth of a newly discovered wormhole, a phenomenon that provides a short cut to a distant unexplored quadrant of the galaxy.

The cast mixes new faces with many seasoned veterans who will be familiar to most viewers. Starring as Commander Benjamin Sisko is Avery Brooks, who plays a human with a tragic past; his wife and child were killed at the bloodiest battle ever recorded in Federation history.

Rene Auberjonois will appear as Odo, who is the Security Officer for the base. Odo is an alien shape shifter who in his natural state is a gelatinous liquid. In order to assimilate and function on the planet, he takes on a humanoid shape, but he can turn himself into any shape he likes.

Other members of the cast include Colm Meaney, who has been promoted from his role as Transporter Chief Miles O'Brien on *Star Trek: The Next Generation* to take on the post of Chief Operations Officer here, and Armin Shimerman, who will play Quark, a member of the Ferengi race who serves as bartender for those stationed on *Deep Space Nine*.

As if *Trek* fans needed any further reason to tune in, the series' two hour premiere will guest-star Patrick Stewart in his role as Captain Jean-Luc Picard.

—Simon Becall

By Marion Zimmer Bradley

At science fiction conventions, fans can sometimes be a second family.



Marion Zimmer Bradley's *Darkover* series of novels have garnered her cult status within the S.F. community. The latest book in the series *Rediscovery*, written with Mercedes Lackey, will appear in April from DAW. Cover painting by Roman.

THE WORLD I GREW UP IN WAS MORE ALIEN TO ME than a good deal of the science fiction I read. It wasn't until I found science fiction fandom that I discovered a place where I wasn't made to feel like an alien myself.

I wasn't exactly your usual teenager. I was a timid little housewife from the wilds of Texas, who while never having met anyone in the science fiction business, was known to every fan of note in the country.

No one born after 1960 can possibly guess what life was like in the '40's for teenagers, particularly girls (no one would have said women then), but something in my old freshman psychology book just about summed it up. Those of us who got A's in school were supposedly pathetic little creatures who were really compensating for social failure with high academic achievement, and we should kindly be encouraged to study less and dance more. (I always wondered why nobody ever thought that perhaps it was the other way around, with the socialites compensating for their academic failure by socializing.)

Girls like us—who were in teachers college having already failed to get society's all-important degree of MRS—should be helped, or so thought the psychologists, to get a trade, so that in case we actually managed to get some wimpy nobody to marry us (not the desirables like a football captain, but an accountant or some kindergarten teacher), we could work and not go on welfare when he left us with six kids and no insurance. But in their eyes we'd always be second best to those women who had a husband to take care of them and could stay home baking cookies and wouldn't have to neglect their kids.

This skewed view of the world was reinforced both by mental health books of the day and by my teachers, who all wondered why I "wasted my mind on that crazy science fiction stuff." And as for fantasy, they considered it beneath contempt unless it was pretty broad social satire like James Branch Cabell, which I didn't and still don't appreciate.

Was it any wonder that when I at last found my real peers, they were science fiction fans and editors? They accepted me for who I was. They didn't know or care if I was "cute," or knew what tune was tops on the Hit Parade, or what new dance was "smoothest." I never met a fan—or an editor—who cared if I was a man, a woman, or one of Aldous Huxley's 50 million monkeys who with 50 million typewriters could theoretically write all of Shakespeare's sonnets.

I think wisely of my first convention panel, about the "New Generation of Writers" on which I appeared with Bob Silverberg, Harlan Ellison, and Jim Harmon. I no longer remember now whether it was Harlan or Bob who said to me, "We are the new generation of writers, Marion." And he was right. Though Jim has since disappeared, everybody now knows who Harlan, Bob and I are. Three out of four isn't bad.

They were my real brothers, of my own generation, and could probably tell similar horror stories of their own schools and school days and of how science fiction became a safe haven in a stormy and unaccepting world. I think even after all these years we still understand each other.

I don't know about Bob, whom I still meet two or three times a year at Locus parties, but I believe Harlan has become very disillusioned about fandom and very unwilling to identify himself with it. I don't blame him. I have to admit that fandom isn't perfect and that I've also had plenty of negative experiences at conventions: I've been shouted down at panels by loud-mouthed jackasses who demanded to know when we were going to cut out all this fannish crap and get down to the serious drinking (I left that convention 10 minutes later and went home, not going to another one for six months). I've gotten bashed by feminists who thought I wasn't doctrinaire or feminist enough. Some fans even carried their search for autographs as far as following me into my bedroom at three in the morning. At times I've literally been mobbed, ringed in by fans eight deep until I yelled for security, and so forth. I even married two fans, and if those were not the most miserable marriages in history, they came close to it.

I found out the hard way that all fans are not equally likeable nor trustworthy, even if they may seem so. But by and large, I don't really regret anything.

But it is the flip side of fandom that has kept me coming back. I once encountered a Big Name Author in a coffee shop and ended up breakfasting with a man who really accepted and understood me for almost the

Continued on page 71



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By Arlan Andrews, Sr.

Will the mastery of nanotechnology allow us to tame the wild molecule?

Scientists now have the technology to manipulate atoms, the building blocks of matter. This new technology may take man as far beyond our time as we are above the most primitive ape man. Illustration by Doug Chetum.



S EVEN TALL SPIRES, THEY WERE, BLUE AS AN EARTH sky, a fantastic mountain range of high-technology structures, standing starkly against the vast reddish plain of an unknown world. Far-seeing prophets had predicted such glories long ago, and at last our instruments had arrived. All over mankind's home planet, people marveled at the picture. In awe of the depth of scientific understanding represented by the simple straight line of peaks, amazed at the promise of technologies of which we once merely dreamed. In the past, such things would have been impossible.

This was one world mankind could never visit in person: our minds could be there, but never our bodies. Only through electronic eyes would we see and experience such scenes, for this place was not made for us.

Imagine, people said, a whole new world! What wondrous things we will discover; what mysteries we will know.

Strange spired structures on a vast red plain: are these photos from the Mars Observer satellite recording marvels as it encounters the Red Planet in December 1993? No, the picture described above is from the research journal *Science* (December 20, 1991), with the caption, "The first hand-built atomic structure"—seven xenon atoms on a crystalline surface of nickel.

Electronic images formed by a Scanning Tunneling Microscope indicate the presence of atoms as blunt, cone-shaped blobs, pointy side up. Because there is no color down among the atoms (light doesn't bounce off them, back to your eyes), the electronic imaging system adds "false" colors to show different elements. Hence, the peaks, xenon atoms, shown in blue, band together to form an atomic mountain chain on the red nickel surface. The picture itself covers an area 5 nanometers by 5 nanometers—a square only 200 billionths of an inch on a side!

(A "nanometer" is one billionth of a meter—40 billionths of an inch; atoms range in size from one-tenth to one-half nanometer. In a broad sense, "Nanotechnology" means anything that works to produce nanometer-scale features not much bigger than atoms.)

Why is this important, placing atoms one at a time on a surface so tiny it would be lost inside the common cold virus? Because it means we now have the technology to manipulate the building blocks of matter, the atoms themselves, one at a time. And that opens up enormous possibilities for science and technology, far more important than anything else ever done.

Nature gives us atoms in the form of natural clusters called "molecules." The history of our race reflects the eternal struggle between Man and Molecule. Since earliest times, humans have taken the vast natural accumulations of molecules in the elements—earth, air, water—and fashioned them into forms more useful to us. From stone axes to spaceships, pyramids to skyscrapers, cauldron concoctions to complex vaccines, we've labored to tame these tiny building blocks to our needs and wants.

During most of this long battle, brute force worked well enough. Ancient man chiseled and hacked and cut and scraped, throwing away unwanted matter, leaving what was wanted, in more or less the shape desired. Then, judicious use of Nature's fourth element—fire—allowed us to re-form some kinds of molecules by melting and casting and forging, and to change other molecules by mixing and burning. Only since the invention of the science of chemistry have we been able to affect matter fairly predictably at the molecular level, to know what we are doing. Our modern civilization has mostly been built on what chemists and physicists and engineers have learned to do with molecules in the past hundred years.

Now, in this last decade of the 20th century, we are finally taking the struggle for the control of matter down to the very battlefield where ultimate victory is possible, among the tiniest bits that exist. Progressing to atomic assembly from "the bottom up," soon we will no longer need to scrape and cut and melt. Ultimately, we will put all the atoms exactly where we want them, without waste of material or energy. Like the design and assembly of any fine machine, there should be no extra parts left over.

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JACK IN

In 1959 the Nobel Laureate physicist Richard P. Feynman spoke about miniaturization to a group at the California Institute of Technology. He speculated on two methods of achieving tiny structures: one way by etching or machining away matter, and the other way by stacking up atoms. He speculated that "electron microscopes in reverse" could be used to define tiny circuit paths, and that evaporated layers could make those paths. This is one example of the "top down" approach to miniaturization. Then, in a true reach of genius, Dr. Feynman said, "I am not afraid to consider the final question as to whether ultimately—in the great future—we can arrange the atoms any way we want; the very atoms, all the way down!"

At that time there was no way for Feynman to know how soon his speculations would become reality. Within a little more than a decade, the "top down" method gave us microscopic integrated circuits, the "chips" that are at the heart of our electronic world today. But the "bottom up" approach languished; there was no conceivable way even to find individual atoms, much less to stack them up and build artificial molecules. But here, too, science would eventually find a way.

Several decades after Dr. Feynman's talk, Dr. K. Eric Drexler envisioned a way to carry Feynman's diminutive dreams to reality. In his book, *Engines of Creation: The Coming Era of Nanotechnology* (Doubleday, 1986) Drexler proposed that one way to manipulate atoms on a massive scale would be to create assemblers, tiny machines the size of molecules, capable of self-replication. After reproducing themselves in sufficient numbers, the assemblers would in turn manipulate other atoms into useful configurations to produce the material or electromechanical assembly desired. The comparison to cellular biology is evident; Nature builds all living things with molecular "assemblers" from the information stored and replicated in the DNA molecule. Drexler predicted that all manufacturing would one day use this process. Our present industrial methods—massive factories with polluting chemicals, wasteful of energy—would be obsolete.

Even the human body—especially the human body—would be fair game for the wonders of nanotechnology. Given the technology to fabricate virus-sized electromechanical devices, there would be no reason to prevent us from designing cholesterol-chompers, a sort of arterial "roto-rooter," or even virus-destroying "nanobots" to recognize and mechanically disassemble

unwanted viruses and bacteria within the body. The desirable kinds of onboard nanobots and microbots would be limited only by the imagination (and eventually, by the laws of physics and engineering.)

*We now
have the
technology to
manipulate
the building
blocks of
matter.*

As dramatic as Drexler's vision seemed, it was unrealistic at the time: science as yet lacked an atomic manipulator capable of assembling individual atoms to build his self-replicating molecular machines. But in that same year, IBM physicists constructed and operated the Scanning Tunneling Microscope (STM), a device that allowed them not only to image individual atoms, but to pick them up and deposit them elsewhere. Since then the field of atomic manipulation has

grown, as more and more researchers have direct routine access to the nanoworld. STM's and similar atomic-level devices are now commercially available and affordable by any moderately-financed industrial laboratory. And almost as important, simulation software now enables chemical design and display at the atomic level without any laboratory at all.

Today, the field has a professional journal, *Nanotechnology*, edited by Dr. Clayton Teague of the National Institute of Standards and Technology (NIST), Gaithersburg, Maryland, where researchers regularly report their theoretical and experimental advances. Dr. Teague himself is in charge of building NIST's "Molecular Measuring Machine," or "M-Cubed," which will be able to locate any given atom over an area 2 inches square. With an STM or similar probe at its center, the M-Cubed will also be capable of picking up a given atom and depositing it where desired, subject to the laws of atomic attraction and repulsion. Though M-Cubed is primarily designed to provide measurement standards for the burgeoning micro- and nano-scale industry, Dr. Teague hopes to be able to make useful atomic-scale constructions, and even to determine the configuration of the human genome by direct observation.

"Nanotechnology" now includes microcircuit fabrication, micromachining, etching, and other bulk processes that produce nano-scale features. To distinguish his "bottom up", atom-by-atom assembly methods, Dr. Drexler currently prefers the more descriptive term "Molecular Manufacturing." But by whatever name he calls it, some opponents in the scientific community still don't believe it: not Drexler's analytical methods, nor his expectations of success, nor his predictions of fantastic new technologies and products.

The futuristic technical advances predicted in *Engines of Creation* and the co-authored *Unbounding the Future: The Nanotechnology Revolution* (Morrow, 1991) seem too far out and visionary to many scientists who work with molecules and micro-machines. Since there are as yet no working artificial molecular machines, some researchers think it highly irrational to state that we will one day be spinning transparent spaceships out of vats of chemicals, or building virus-killing nanobots to clean out our bodies. They cite the difficulties of working with existing natural proteins and other complex molecules that fold themselves according to incredibly convoluted configurations still not yet understood or duplicated. But Drexler maintains that new artificial molecules—his assemblers—can be designed from scratch, in such a way that will bypass many of the problems natural molecules present to scientists. He thinks molecular design engineers will eventually prevail and is determined to prove it.

The tremendous promise of nanotech—and the controversy surrounding it—were featured in the respected journal *Science* (29 November 1991), in a special section describing the current status of nanotechnology. In an article, "The Apostle of Nanotechnology," *Science* quoted Drexler's 1986 comment that his nano-assemblers "will bring changes as profound as the industrial revolution, antibiotics, and nuclear weapons all in one." But a dissident, Hewlett-Packard microdevice developer Phillip Barth, was quoted to: "You might as well call it nanoreligion. . . . The man is a flake."

Undaunted, Drexler counters his critics with a technical treatise and textbook on nanotech design. Published in November 1992, *Nanosystems: Molecular Machinery, Manufacturing, and Computation* (John Wiley and Sons), is intended to "assemble. . . the analytical tools necessary for the design and modeling of mechanical systems based on molecular-precision moving parts of nanometer scale." By publishing his detailed analyses of possible nanosystems, Drexler hopes both to demonstrate the elements of nanomachine design and to educate new multi-disciplinary researchers and future inventors.

Uninvolved observers may draw their own conclusions about the possibilities of nanotechnology, but we have many examples by which to judge the possible outcomes. Artificial Intelligence (AI) was much touted in the 1960s as an imminent achievement. Today, although truly intelligent machines don't yet exist, AI is still extremely useful in many forms, and computers can accomplish previously impossible tasks. On the other side, in my own lifetime, spaceships were "impossible," color television was "unconventional," com-

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Many will depart the earth the day the Apocalypse finally arrives...
but come the morning after, what of the rest of us?

A FAMILY OF THE POST-APOCALYPSE

BY THOMAS M. DISCH
Illustration by Fred DeVita

IT WAS CHEAPER LIVING IN THE danger zone, which was why they'd settled there after everything went haywire. Dad and Mom and the three Big Babies.

All this was after the Rapture and the Second Coming (which they never got to see), and the only people left on Earth were the people who hadn't been saved. Things weren't the same as when they'd gotten their starter house back in Wisconsin, but as Dad would say, "When have things ever been the same?" Antichrist was supposed to be in charge these days, though it wasn't that much different from when the presidents were being elected. He appeared, as they had, on TV from time to time, to announce the latest disaster and to reassure the survivors that they shouldn't worry.

The major difference, from Mom's point of view, was not having any easy listening on the radio. Just heavy metal, which was bad for the kids, especially when they were teething, which was most of the time.

Scorpions could be a problem. Likewise power outages and brownouts. Fortunately Dad had figured out a way to hook up the refrigerator to the car batteries he'd scavenged after the big pileup on Route 66. The lawn, for a wonder, was still in good shape, except in one area around the septic tank, which had become a little forest of mushrooms almost overnight.

Since there was no more industry or commerce or employment or such as that, there was plenty of quality time for the family to do those things they'd been neglecting before Armageddon. The trouble with this was that the Big Babies, who'd earlier shown some sort of aptitude for games that didn't involve numeric skills, seemed to have regressed (even as they'd grown so much larger) to a more or less infantile state. Hence their name now. It wasn't just their three; it was all the children left after the Rapture. Their oldest, Buddy, 3 at the time, was still capable of a game or two of tic-tac-toe, but the twins were dumb as fish. Strong, and cute as the dickens in a strange way, but dumb as fish. Dad had fixed up a kind of harness from the old Buick's safety belts and taught the twins to pull the lawn mower with it, which they seemed to like to do and which was why the lawn looked as good as it did. But intellectually they were not apple-of-the-eye material.

Time had stopped, so clocks didn't work anymore, and the survivors had split up into factions as to what was the exact date and day of the week. But people still tried to get to church on Sunday on a hit-or-miss basis. In some ways church attendance

seemed more important now than it had in pre-Apocalyptic times, even though there wasn't any urgency about whether you'd end up saved or otherwise. *Otherwise* seemed to be

everybody's situation. But even so there could be a kind of comfort in singing the songs together, and now that Reverend Ashburn was no longer in charge of the music program, the menu of songs was larger, albeit rudimentary, out of respect to the survivors' musical capabilities and what they remembered. "Inky-Dinky Spider" was popular; likewise "Chapel of Love." Whatever enough of them could remember the words for. There were a lot of Christmas carols, of course, which are always comforting whatever the weather, and staples like "Yankee Doodle" and "America the Beautiful." But never "Oh Say Can You See," since everyone agreed that was outside the vocal range of anyone but a professional soprano.

After the service there would be a coffee hour. Usually, instant, or even in a pinch herbal teas—whatever the Refreshment Committee had been able to scavenge. If you had guns, you had to check them with the ushers. The rule wasn't often enforced, since mostly everyone there knew everyone else. Wasn't that what church was about? A sense of solidarity, of belonging, of *communion*. Sundays could be wonderful, if you guessed right and got there when the other survivors did.

THEY USUALLY AVOIDED DISCUSSING THE OVERALL SITUATION, partly from a sense of terror but mostly because they simply didn't understand what that situation was. They weren't in hell precisely; in many ways they were still better off than most people had been before Armageddon, people in Bangladesh or Ethiopia, for instance. On the other hand, terrible things did happen pretty regularly to folks in the danger zone, often on quite a large scale. Sometimes, in the middle of the night, you could hear one of the Post-Apocalyptic biker gangs roaring along Route 66, gangs with names like Plague Riders or L.A. Locusts, all of them satanic drug addicts and ritual child abusers, and the next day down at the Exxon station, where the owner had a working CB radio, you would hear that a whole small town had been turned to rubble. Or you'd see the wrecks alongside the road and the people who'd been chained to their overturned cars and tortured, some still alive. Mom would say, "There must be *something* we can do for them. For the children at least." Dad wouldn't say a thing, just keep driving, eyes



on the road, hand on his gun. The bikers hated anyone driving a car. Once, right after the Rapture, a biker drinking outside a 7-11 had shot out both of the Buick's back tires, and they'd driven the last three miles home on the rims and shredded radials. Now Dad was driving a Honda Accord, which was embarrassing for someone who'd always believed in buying Made-in-America products. But you had to ask: was this still America?

At night, after the Big Babies had been drugged and put to bed, if there was nothing but reruns on TV (which was more and more the case), they would reminisce about the America they remembered growing up in. Their favorite sandwiches or brands of soft drinks that no longer existed. But they avoided recollections about old friends and neighbors back in Laurel Heights, since those memories could only rankle now. The months of living under quarantine, the foreclosure on the house, and finally the eviction, and all because of what was happening to the kids, which wasn't *their* fault. Which wasn't anyone's fault, really, unless you believed the theory that it was due to the fallout that had resulted from Armageddon. The fallout was also supposed to account for what had happened to the wildlife. Whatever the cause, Mom firmly believed that eventually the doctors would find a cure. "Call me an optimist!" she'd say, with a forced smile. "but I'm still counting on attending the twins' college graduation. I've got the date marked on the calendar."

The war was also blamed for the way the weather had gotten so scrambled, so that there'd be a string of hot days, and weeds would start shooting up like crazy, and the mushrooms over the septic tank would bloom and turn all mushy, and then overnight it would be like November. Some trees were trying to sprout new leaves while a block away the same kind of tree would be turning yellow.

But it was more than the seasons that were out of kilter; it was time itself, and the perception of it. The Post-Apocalyptic world seemed to have dipped one foot into the lacy surf of Eternity. Mom could remember one afternoon when she'd been in the kitchen, chopping an onion and listening to Anthrax on the radio, and the chopping and the song had gone on and on and on, the way on old phonographs a record will continue playing if you don't lower the arm that engages with the spindle. The onion became an eternal onion, infinitely chopable. The infernal scream of the

song continued shrilling through her mind for days after, like a car alarm that no one will turn off. Meanwhile, in the basement, where Dad had been cutting a dovetail joint with his router, the same thing happened to him. The bit of the router attacked the pine board with an interminable ferocity, yet without any sense of the process happening in slow motion.

Sometime later they learned that they had had a close brush with one of the great clouds of smoke that passed over the danger zone at intervals like tornadoes. The clouds seemed to act as a kind of lens focusing the destructive force of the Last Judgment and creating temporal anomalies of the sort Mom and Dad had experienced. These anomalies were even greater, presumably, beneath the center of the cloud, but even the few people who claimed to have survived the cloud's full destructive force were unable to give any account of what had happened to them. They could only liken it to waking from an absolutely terrifying nightmare, which they forgot, all but its impact, at the moment of waking, the moment, an eternity later, that the cloud had passed.

FOOD WAS THE BIG WORRY. RIGHT AT THE BEGINNING OF Armageddon, when China was nuking Israel and vice versa, as had been foretold, Dad had the foresight to lay in supplies of anything he could lay his hands on. First, shopping at all the malls within driving distance, and then, when the shortages and/or looting had emptied the malls, by foraging in houses that looked to be abandoned. The pickings were generally slim. Most of the people vacating their houses to escape the danger zone had been prudent enough to empty their cupboards of viable foodstuffs, leaving nothing but the contents of their spice racks and the dregs of the vinegar and A-1 Sauce. But a couple times he got lucky and was able to fill the trunk and half the back seat of the Buick with food, whole cartons of Bonzoni spaghetti, Quaker Oats, dried milk, Ragù Thick & Hearty Spaghetti Sauce, and, for some reason, 48 one-pound bottles of artichoke hearts.

The artichokes did not mix well with the Ragù sauce, and no combination of spices—tarragon, allspice, summer savory, what have you—was able to help. After a while, everything started tasting like artichokes, even the Quaker Oats, which unhappily

AERIAL RECONNAISSANCE OF A CONFLAGRATION AT THE HEART OF THE MUTANT RAIN FOREST

By Bruce Boston and Robert Frazier

RAINBOW FLOCKS WHIRL IN A MAELSTROM OF FEATHERS over the drifting gray incontinence of smoke. Primaried macaws. The blinking of neon toucans. A transparent ibis with lungs visibly pumping. The milky glistening flight of albescent eagles. Dipping its prop into avian shadows upon the haze like a beast testing the ebou acid of the Styx, our craft volplanes across the Immense fire site. Ascending hordes of bats and winged toads alight upon the plane's fuselage, causing the old woman who accompanies us to start back from her view. Their suckered paws are slime pink upon the glass, the scrabbling of their razor claws like hail.

Deep in the heartland of this prodigal wilderness, carved from massive trunks and structured from the shaping and reannealing of living growth, a biotic metropolis waits on the blackened horizon.

Tapering clouds of doomed insects flume past us, darkling twisters that surge with disparate energy and often explode in tempests of chitinous flak.

More subtle are the flickering tendrils of flame that flare up and die, flare up and die, beckoning like the arms of demons urging us to join them below. Our compass is set on the heart of the conflagration. The plane banks, and the old woman begins to speak of the tribe she claims to have discovered there. She cries for a lover who stayed behind to study and learn, to help build a mecca in green hell. Her rumored madness surfaces in hoarse whispers of another lover "who tamed my soul, who plundered my senses, whose acrid feline touch left my womb fused and barren as the sand of a nuclear range."

Deep in the prodigal heartland of the mutant forest, their city offers a symbiosis of fauna and flora, an architectonic pastiche of budding vegetation that changes even as we record its singularity.

As we navigate the high walls of particulate gloom, our passage delivers us into a clearer air space, dotted by wispy plumes and dancing whirlwinds of ash. The terrain beneath is etched in startling contrasts.

didn't stretch very far, since almost as soon as each canister was opened the dry oatmeal was swarming with tiny black weevils. They'd all have preferred oatmeal to artichoke hearts as the staple of their diet, instead of artichoke hearts, but as Dad declared, trying to sound like a good sport, "Pillagers can't be choosers." "Pillagers?" Mom repeated, as though she'd never heard the word before. "I don't know what you mean by pillagers."

ON SOME EVENINGS THE NIGHT SKY WAS LOVELIER THAN EVER before. The stars didn't just twinkle, they were like flashbulbs popping. Also they changed colors, shifting from a steely blue to a deep dark red that made your eyes feel funny. At the same time there would be a sound almost too low to hear, a kind of rumble as though a Russian all-male choir was humming the bottommost note of the scale. The ground would seem to shake, and then one night, looking up at the sky, they realized the ground really was shaking, especially in the area around the septic tank.

And then, just as it is written in John's Revelation, chapter 9, verses 1 to 11, the septic tank erupted like a volcano, spattering everything in sight, themselves, the house, the garage, the moribund maples, and filling the air with a dreadful stench. Yellow smoke billowed from the pit that had opened up, and they realized they were watching the birth of one of the Post-Apocalyptic clouds that were the terror of the danger zone. The bottomless pit was here in their own back yard, and out of it now, with faces like the faces of men but hair like the hair of women (verses 7 and 8), streamed a legion of locusts.

Big ones, and dressed, according to the prophecies, pretty much like the bikers in *Mud Max*, except that instead of riding Harleys their bikes were incorporated into their exoskeletons. It was the whirring of their huge wings that sounded like the revving of unmuffled engines.

The Bible says at this point that in those days men shall seek death and not find it, shall desire to die, and death shall flee from them. But it doesn't go into the details, it only says that the locusts had stings in their tails and the power to torment people for five months, if they didn't have a particular mark on their forehead, which Mom and Dad didn't. Five months is a limited sentence,

but when you are being tortured around the clock by giant insects with stings in their tails and sadistic imaginations, it can seem an eternity, and in a sense, because of the temporal dilations produced by the pall of smoke that covered the sun and the moon and even the fluorescent lights in the kitchen, it was an eternity.

"How'd ya like a taste of this then?" Ahaddon, the leader of the locusts, would sneer, waving his stinger back and forth, brushing their naked flesh with its venomous tip, and then, *Whoop!* he'd give it a flick and connect right to the swollen lymph gland in Dad's armpit, or *Whap! Whap!* across Mom's lacerated breasts. "Oh, I'm a bad one, yes I am," he'd quip, and all his locust cronies would guffaw on cue.

Ahaddon also taught the Big Babies to act as their parents' tormentors, when the locusts in the house were too bored or drunk to torture Dad and Mom themselves.

The human body has a threshold beyond which pain stops registering, so there were times when the locusts would vanish for days at a time, leaving Dad and Mom to recuperate and make lamentations. "I don't understand it," Dad would say, shaking his head and wincing at the pain. "What did we do *wrong*? Why is this happening to us?"

"It was our fornications and abominations!" Mom lamented, reaching into the fireplace for a handful of ashes, which she rubbed into her wounds.

"What fornications? We're married, aren't we? Is that fornication?"

Mom groaned. "And what about the time you came home drunk and made me do you know what? Oh, Jesus, I wish I were dead!"

"You always hated sex," Dad complained, for the umpteenth time. One of their cruellest tortures was simply repeating the same conversations over and over, him blaming her, her blaming him, and in the other room, swollen to an outlandish size but screaming to be fed every waking hour, the Big Babies would claw and scabble at the plywood nailed over the windows.

"You know what I wish?" said Dad. "Sometimes I wish we'd never got married." Immediately after he'd said it he felt guilty.

Mom looked at him with annoyance but not actual hostility. She smiled a sad little smile and patted his hand, but very gently because of the boils. "It isn't your fault, dear. It isn't anyone's fault. It's just the times we live in." □

An altered plain stretches ahead toward further haze. The evidence of past burnings outlines rugged byways. Rectangular viridian patches have survived everywhere, now peppered with a thickening coat of cinder falls and edged in solarized yellow from the extreme heat. As the stench of organic incineration fills the cabin, fumbling in her flight jacket the old woman extracts the crudely-wrought crucifix of an impaled panther, a religious symbol outlawed in the Northern Cities. Her parchment hands caress the graven image tenderly.

Deep in this prodigal land of endless greening we have encountered a consciousness phenomenal in its swift ascent from animal origins, uncanny in the delineations of its perspective.

We note how the fire has traveled Hydra-like up trunk valleys and along the course of rivers, scaling mountains for a foothold in farther realms, as if colonizing the landscape with its fiery brand yet sparing the main clumps of forest for another fate. Our plot calls it unnatural and crosses himself twice. The old woman follows suit, clutching the hideous icon to her withered breasts, and begins to chant an incantation in a voice no longer recognizable as human, a crescendo of guttural hisses and glottal stops which culminates in a soprano animal screech that sets my teeth on edge. At last we admit that we are in the presence of one,

regardless of her sanity, who understands far more of the world below than we may ever be able to fathom.

Deep within our prodigal thoughts we speculate and worry tomorrow endlessly, we extrapolate the particulars of some ultimate confrontation with the denizens of this green heartland.

As we emerge from a churning bank of dark cumuli, seeded by smoke and thickening across the center, we spot an immense tree—no, a score of trees, twining together like vines reaching for the light. Gathered about the circumference of this Yirigal, slashing with unbounded energy at its woody tissues, work parties of cats stand, tall and deceptively lean, taming the errant growth into dwellings and streets. Their fur is matte black with a sleek bluish sheen. And beyond their endeavor the burgeoning city waits beneath a sky where smoke and burning ash do not sail, where we can watch the dwindling white circumference of our passenger's parachute as it drifts earthward past slender ceiba towers and liana-draped terraces, fluorescent with the bloom of unknown mutant strains.

Deep within our hearts the prodigal past haunts our imagination, we rue our tainted histories and the destructions we must claim as the fire-dampening storm begins to wail.



The Frog Wizard only had one trick up his sleeve—and if it wasn't the *right* trick, King Alfred would see to it that the magician croaked!

THE FROG WIZARD

BY LAWRENCE WATT-EVANS

Illustration by Annie Lunsford

The charts didn't show an island there, but the greenish smudge on the horizon certainly looked solid. Captain Kai was curious, and his schedule was not particularly tight, so he ordered the helmsman to make for whatever it was—cautiously, of course.

It was an island. The charts were wrong. This was not really very unusual in these seas, but it was interesting.

An uncharted island could have its uses; Captain Kai dropped anchor and sent a dozen of his men ashore in the ship's dory to explore the place, with a lieutenant named Kwan in charge.

This was not exactly Lieutenant Kwan's idea of a good way to spend an afternoon, but he knew better than to argue. He sat in the stern of the boat muttering vile imprecations into his beard as his men rowed ashore.

The shore itself was unremarkable—a broad expanse of sandy beach stretching off in both directions, and at the top of the slope a line of palm trees. Kwan sighed as he clambered out of the boat; he knew that his sailors would treat the whole thing as a vacation from their dreary life aboard ship and would run about as wildly and heedlessly as if they were the emperor's personal guests in the pleasure gardens at Hsichin. One or two would probably get lost, at least one was bound to eat something poisonous, and about half could be expected to return to the ship with rashes, stings, bites, bumps, and bruises from the local plants and animals. A broken wrist from falling out of a tree would be no surprise at all and would mean a tongue-lashing from Captain Kai for Lieutenant Kwan—a man with a broken wrist can't haul on ropes, and it was an officer's responsibility to keep his men fit for duty. Life aboard ship might be dull, but it was safe.

Kwan was still double-checking the high-water mark and making certain that nothing could possibly wash the dory back out to sea even if the man posted to guard it ran off or fell asleep, when one of the men shrieked.

"It's started already?" Kwan muttered. He turned.

His men were scattered across the beach and along the line of trees. The shriek had come from Lin, who was now standing

beside a palm and waving desperately. Kwan sighed and trotted up the slope, waving for the others to join him. To his surprise, most of them actually obeyed.

A moment later all but three of the party stood clustered about Lin. Wren had, as ordered, stayed with the dory, while two others had drifted off somewhere.

"What is it?" Kwan demanded.

Lin pointed back into the undergrowth beyond the palms—into the jungle, Kwan told himself resignedly. The tangle of greenery qualified as jungle.

"A demon!" Lin said.

"Oh, pff!" Kwan said. "There are no demons in the waking world!" That was what the priests of his faith taught, and depending on his mood he either believed it to be true, or hoped that it was. "It was tall and thin, with white hair all over its face and horrible pale skin," Lin insisted.

"It wasn't just a man—a white, perhaps?" Kwan asked soothingly. Lin admitted, "Well, I didn't get a very good look at it."

Kwan nodded and then shouted into the jungle, in his best trade pidgin, "Hey, we come be friends, you come talk, yes?"

The face that popped out of a cluster of ferns startled even Kwan, who thought he was ready for anything. He saw how Lin could have mistaken it for a demon; an unkempt, untrimmed white beard bristled in every direction from a thin, lined face. Pale blue eyes peered from sunken sockets, and a broad bald spot glistened with sweat. Despite the constant tropical sunlight, the skin was pale and pasty.

"Who are you?" this apparition demanded, in reasonably clear Language.

"I'm Kwan, third lieutenant aboard *Glory of Summer Dawn*, and these are some of the crew. Is this your island?"

"You could say that, I suppose," he said, blinking. "You... ah, you aren't from Batrachia?"

"I never heard of Batrachia," Kwan said, truthfully.

"Or King Alfred?"

"Nor King Alfred." This was a slight exaggeration, as Kwan had once heard of a legendary ruler by that name in one of the white countries, but that King Alfred had been dead for a thousand years or so, and whichever country it was that claimed this ancient monarch—Kwan could never keep all those little countries straight—it certainly wasn't Batrachia.

"What are you doing here, then?" the stranger demanded.

"Well," Kwan said, "We were passing by, and saw the island, and noticed that it wasn't on our maps, so we came ashore to see what was here."

"All right, you've seen what's here—I am. Now what?" His eyes were wary, and reminded Kwan of a tiger he had once seen in the menagerie at the emperor's summer palace.

"I don't know," Kwan admitted. "Is there anyone else here?"

"No."

"Ah... do you want to be here?" Kwan asked. "I mean, were you shipwrecked?"

"No, I got myself here on purpose; I don't need any rescuing, thanks."

Kwan considered this, unsure whether it indicated derangement—he wondered just how long the poor creature had been living alone on this island. He ventured, "Perhaps you might want to come speak to our captain, though?"

The bearded ancient blinked again and said, "Why, that's very generous of you. I think I'd enjoy that. I haven't had anyone to talk to in a very long time now."

"Well, then," Kwan said, "Come back to the ship with us."

The white man squinted at him. "You're sure this isn't a Batrachian trick?"

"Oh, I'm quite sure," Kwan said quickly. This white man, Kwan decided, was not entirely sane.

"All right, then. Lead the way." The stranger stepped out of the bushes, and Kwan was horrified at the ragged condition of his garments. He wore only tattered remnants of something that might once have been an elegant robe.

What, Kwan thought, would Captain Kai make of all this?

He found out several minutes later, back aboard the ship.

"A castaway!" the captain exclaimed. "How marvelous!"

"I'm no castaway," the stranger protested. "I was there on purpose. My boat's around the other side of the island—if it hasn't rotted away."

"Ah," Kai said. "Then why were you there?"

"I'd rather not say."

The captain nodded. "As you wish. You will join us, though, for tonight's dinner? Surely, you will grant us this favor? We can exchange tales, as is the custom among our people."

"Well, I... it..." The stranger hesitated, but then his reserve collapsed. He bowed, and said, "Of course. You do me honor, good sir!"

Kai bowed in return, and Lieutenant Kwan stood by, admiring his captain. An exchange of tales was hardly mandated by custom in a situation like this, but it would almost certainly reveal many useful things without any sort of unpleasant interrogation, even if the stranger did not intend to tell his own story. A culture's tales tell much about its people, what they value, and what they believe.

The captain then turned his guest over to Kwan once again, to be cleaned up and made presentable in time for the evening meal.

Kwan did his best.

When the sun was half-sunken and its last rays painted the water the colors of blood and gold, the ship's officers gathered around the white-draped table in the great stern cabin. The stranger's beard had been brushed out and the edges trimmed, but its length had been left intact, in honor of its owner's plentiful years; his rags had been replaced with one of Lieutenant Ma's brocade tea robes, as none of Kwan's was long enough.

The ship's officers were also wearing finery—not necessarily their best, but formal garb, all the same. Taking their cue from their captain, they seated themselves in near silence and made only polite small talk while they ate the meal of shellfish and vegetables that the ship's cook had prepared.

When the last dish had been cleared away, Captain Kai cleared his throat and began speaking, in a pleasant sing-song, reciting the Tale of the Three Great Fishes.

When he had finished, he nodded to First Lieutenant Shi-Lu, who proceeded to tell the story of his notorious Uncle Shi, who had almost been beheaded for introducing rice wine to the island of Hsin Kuo, but had saved himself by besting the emperor in a game of Caravanserai.

And so it proceeded around the table, as the officers told stories they had heard as children, recited the classics of the empire's literature, or recounted incidents that had befallen them or members of their families. At last it was the stranger's turn. He coughed, glanced around, and began to tell this tale.

LONG AGO IN BATRACHIA, THERE LIVED A WIZARD. HE WAS NOT really very much of a wizard, as it happens. No matter what he did, no matter how hard he tried, no matter how much he studied, he could only work one piece of real magic. He was very good at sleight of hand and at all manner of stunts that look like magic, but that's not quite the same thing, and he knew it. Real magic means miracle-working not putting a pigeon up your sleeve, and this wizard only knew one sort of genuine magic. He'd learned it as an apprentice. When spells for turning lead into silver regularly failed, when his love-charms just gave people bellyaches, when a simple geas made a smelly mess all over his carpet without even making the intended victim feel guilty about it, this one feat came easily to him. He could do it instantly, just with a wave of his hand.

It wasn't a simple, ordinary spell, either like candle-lighting or card-flipping—he couldn't light a candle for all the gold in a dragon's hoard, but somehow he had mastered, without meaning to, a truly spectacular piece of magic. Perhaps some perverse minor deity had been having a joke with him in allowing him the easy use of this major transformation.

He could turn people into frogs.

A simple gesture, and anyone he chose would shrink down, turn green and slimy, and hop away, eager to eat bugs, as much a frog as ever grew out of a tadpole. He could do any number of people at a time too—turn whole nations into frogs, if he chose to.

He didn't choose to, however, and with very good reason. Unfortunately, he couldn't turn the frogs back into people again, and after one or two unpleasant incidents before he realized the situation, he swore never to use the spell again. He was too soft-hearted, in the ordinary course of events, to leave even his worst enemy stuck as a frog. He practiced the gesture in secrecy, just in case he ever needed it, but he never used it.

He still wanted everyone to know he was a wizard though. There were a good many wizards in Batrachia at the time, and they were something of an elite, highly respected by the rest of the population and deferred to in several ways. A wizard could always count on a fair price at the village market, and no smith would ever miss the promised delivery date on a wizard's order. After all, angering a wizard is dangerous. He might turn you into a frog. Everyone knew that, even though in truth, most wizards didn't know that particular spell.

That this one wizard did know it and had mastered it so completely, without ever learning any more useful or benign magic, was a source of constant private irritation, but he had no choice but to live with it.

And since he had mastered this spell and really could, if he chose, turn people into frogs, he played the role of a wizard to the hilt. He wore a fancy hat, carried a wizard's staff, and lived in a well-furnished cave. He studied old books—partly in hopes of learning more magic, but mostly to keep up his image. He kept strange pets, such as lizards and giant spiders—nothing supernatural, though, since he had no way of manufacturing, summoning, or controlling such creatures. He equipped himself with a full wizard's laboratory, crammed with all the usual arcane paraphernalia—skulls, stuffed bats, mysterious powders, all of that—even though he couldn't use a single bit of it.

In short, he did everything a powerful wizard did, except to perform magic. Reasonably enough, everyone in the vicinity assumed he was a great and powerful wizard.

This was all very well, and in fact it was exactly what the wizard wanted. He led a quiet, comfortable life and had the respect and affection of his neighbors. Really, he was quite content with the situation.

Unfortunately, it didn't last, because late one summer Batrachia was invaded.

The first the frog wizard knew of this was when a messenger knocked on the door of his cave one morning, carrying a summons from King Alfred.

The wizard answered the door, expecting to see one of his neighbors come looking for a bit of advice, or maybe some villager asking after a philtre of some sort, and instead found himself face to face with a royal herald in full regalia.

The wizard blinked, and the herald unrolled a scroll and began reading. The wizard stood there, feeling rather foolish, and listened.

The herald read, "Whereas, Our Realm has been attacked, without provocation, by certain Enemies, and

"Whereas, Our normal methods of defense may not provide a complete assurance of Victory against this foul invader; and

"Whereas, supernatural methods needs must be employed against this Desecration of Our Borders, and

"Whereas, Our enlightened rule has provided all alike, commoner and noble, mortal and magician, with great benefits and fair treatment

"Therefore, We call upon all those with any skills in arcane practices, be they in wizardry, sorcery, or other practices, to recognize their obligation to the Crown, and

"Therefore, all practitioners of Magic are hereby summoned forthwith to the Castle Royal, by Command of His Majesty Alfredus Rex.

"Signed, and with Our Seal, this 14th day of the Ninth Month, in the fifth year of our Reign."

The wizard was very impressed by all this, which sounded quite majestic, and when the herald had finished reading the wizard asked him just exactly what it all meant.

"It means that you're to come with me to the castle, immediately," the herald explained.

The wizard considered that for a moment and then asked, "Why?"

"You're a wizard, aren't you?" the herald asked.

The wizard agreed emphatically that yes, he was indeed a wizard.

"Well," the herald explained, "All wizards are being summoned to the castle to help fight off the invader."

The wizard was not at all sure he liked the sound of that.

The herald insisted and made some rather nasty threats about what the king might do to uncooperative magicians. The wizard gave in on the major points, but he also insisted a little and was allowed time to pack a bag.

While he was packing, and on the long walk to the castle, he asked the herald more questions, and got more of an explanation of just what was going on.

It seems that the exact reason for the invasion was not entirely clear to the Batrachians, but it appeared to have something to do with an insult the Batrachian king, Alfred the First, had unintentionally directed at the Grand Duke of Darchmont. Although the insult was completely inadvertent, the grand duke had chosen to take umbrage—he had probably been looking for an excuse. He had led an army of some 4,000 men into Batrachia, marching through the peaceful countryside, burning villages and trampling farms and, in general, making life very unpleasant for the citizenry.

The year had already been a bad one for the Batrachians, as the wizard well knew. Some quirk of the weather had cursed the kingdom with a veritable plague of gnats and mosquitoes, the crops had been poor, several wells had gone dry at midsummer, and then a few weeks later, heavy rains had caused flooding along the rivers.

After all this, most people were not really surprised by the attack. As everyone knows, bad luck often comes in streaks. Some people had wondered if they had offended some god or other, but most just put it down to chance.

Naturally, King Alfred was quite upset by the invasion. The kingdom had been at peace for years, and the small standing army was out of shape, out of practice—and out building levees against the floods.

Even in the best of times, the Batrachian army was probably no match for the grand duke's force, and as it stood, defeat had appeared certain. From King Alfred's point of view, that was completely unacceptable. The grand duke had announced that his honor had been impugned by the king, and that only a direct personal duel to the death between the two monarchs would satisfy him. As the duke was young, fit, and famous for his skill with a broadsword, while King Alfred was aging, fat, lazy, and inept, this was the same as stating that he intended to kill the king.

King Alfred had therefore decided to find some way to drive the grand duke back across the border without an army. Obviously, that would take magic.

Accordingly, King Alfred had sent messengers out, posted proclamations, and did everything he could to locate and gather every wizard in Batrachia. When they had been located, he summoned one and all, however powerful or puny, to his castle.

And that, of course, included the frog wizard.

The wizard really did not want to be involved in a war, but he did not see any graceful way to back out, so he went along with the herald without any serious argument.

Soon enough they reached the royal castle, where the wizard was introduced around, checked off a long list of magicians who were expected, and then generally made welcome.

HE PROMPTLY FOUND A QUIET CORNER AND DID HIS BEST TO stay there, out of the way, while the messengers and heralds brought in wizard after wizard. The frog wizard recognized several of them, while others were total strangers—and they kept on coming, and coming, and coming.

Really, he had had no idea that there were so many wizards in Batrachia! They kept on arriving for the next two days.

The frog wizard generally stayed in his corner, trying hard to be inconspicuous and succeeding, for the most part. He slept on a mat in a wizardly barracks that had been improvised in a gallery, and he ate the bread and cheese and ale that the castle servants distributed three times a day, but other than that, he simply sat quietly and watched and waited.

On the third day, the wizards stopped coming. Instead, the invaders appeared and surrounded the castle.

By this time, though, the castle was full of wizards, dozens of wizards, wizards of every description, marching about and boasting of their prowess.

The grand duke's army arrived about midday and found the drawbridge up and the battlements manned—they had no way of knowing that the defenders were the castle servants rather than soldiers. They settled in for a proper siege, setting up tents and pavilions, bringing up a battering ram, and so forth.

Meanwhile, inside the castle, the wizards were milling about, unsure just what was expected of them.

Around sunset, King Alfred appeared, in his best royal robes and wearing his crown, and announced to the gathered magicians that they were to use whatever magic they had at their disposal to destroy the besieging forces.

*Amid all that
terrible magic,
it certainly
looked as if the
grand duke's
army were
doomed.*

"When?" someone called.

"Right now," the king replied. He waved a dismissal and retreated to his apartments.

The wizards looked at each other, shrugged, and began making magic.

The noted sorcerer Rudhira the Red brewed up lightning in a kitchen cauldron, balls of crackling blue-white lightning that hissed and spattered sparks across the floor.

Kiria the Blue etched a pentagram on the throne room floor with blue chalk and set about raising a few cooperative demons.

Skellen the Fat began chanting a long, complicated spell intended to draw the floodwaters up from the river and wash the invaders away in a great wave.

Simon the Foul collected assorted leavings from the kitchen midden and began assembling and animating homunculi, nasty little man-shaped creatures the size of your hand that would sneak out of the castle and torment the enemy with poisoned batpans and whispered curses.

All the various others set about their various fearsome sorceries, while the poor little frog wizard just sat there in his corner, looking scared and nervous. Amid all that terrible magic, it certainly looked as if the grand duke's army were doomed.

But then things began to go wrong.

Skellen's great wave swept up from the river just as Rudhira's lightnings spilled out of the castle, and the two collided with a great hissing roar; the water put out the fire, while the fire boiled the water away into steam, steam that drifted harmlessly up into the night sky.

Kiria's demons sprang from the pentagram, hungry and ready for the sacrifice they had been promised. The invocation had directed them to devour those who did not belong in the area, and they obeyed that—but instead of the enemy soldiers, they snatched up Simon's homunculi and gobbled them down like squirming candy. Homunculi don't belong in our world at all, and to a demon, that's far more obvious than a human's nationality—demons aren't very bright.

Their hunger satisfied, the demons then vanished and could not be conjured again until the next full moon.

Nor were these the only disasters as the wizards, accustomed to working in solitude, got in each other's way. Man-eating plants bloomed by moonlight and consumed wizards rather than soldiers; spells of sudden death became entangled with spells designed to send the invaders dancing helplessly and harmlessly away, and wizards died in jigs and givottes; fearful illusions overlapped each other in grotesque juxtapositions that caused more laughter than fear among the besiegers.

Wizards were sent flying to the moon. Wizards were swallowed by the earth. Spells backfired, misfired, and crossfired, and the castle filled with smoke and strange light, while unearthly howls echoed from the stone walls.

Some of the spells worked properly—but not very many.

By dawn, the castle was still surrounded by about 3,000 Darchmontane soldiers, and the wizards were all gone, banished or slain by spells gone wrong.

All, that is, except the frog wizard, who had stayed crouched in his corner, never even considering any attempt at magic.

As the sun rose, the smoke cleared, and the last eerie echoes faded, the castle's inhabitants crept out of hiding. The king, still in his regalia, emerged from his chamber and looked over the aftermath. His gaze swept across smeared pentagrams, spilled potions, and scattered scraps of wizards' robes, and fell at last on the frog wizard, curled up in the corner.

"You!" he called. "Come here!"

Reluctantly, the frog wizard got to his feet and came. He bowed deeply and then knelt before the king.

"You're one of the wizards, aren't you?" King Alfred demanded.

The frog wizard nodded.

"You're really a wizard?"

"Yes, Your Majesty," the frog wizard replied.

"You can work real magic?" the king persisted.

"Yes, Your Majesty," the frog wizard said.

"Then do something about those soldiers out there!" King Alfred demanded.

"But, Your Majesty..." the frog wizard began.

"Do something, wizard!" the king shouted, leaning over until he was yelling right in the wizard's face.

The frog wizard had never liked being shouted at; it made it hard for him to think.

"Do something about those soldiers!" the king insisted, pointing at a nearby window.

Without really meaning to, the frog wizard *did* something. He worked his one and only spell, directed at the soldiers outside, and all 3,000 of them were abruptly transformed into bullfrogs—very large, hungry bullfrogs.

AT FIRST NOBODY REALIZED WHAT HAD HAPPENED, AND THE king continued to shout for several minutes before somebody tugged at his sleeve and pointed out that the invaders were gone and had been replaced by a horde of amphibians that were now hopping about in mad confusion.

The king stared out the window, and, forgetful of the royal dignity, most of the other people in the room crowded around him and peered out over his shoulders.

Sure enough, the invading army was gone.

King Alfred turned to the wizard and demanded, "Did you do that?"

The wizard, too miserable to speak at the thought of what he had done to all those men, merely nodded.

"Is it permanent?" the king asked. The wizard nodded again.

"You're sure?"

"I'm afraid so, Your Majesty," the wizard replied.

The king's face broke into a broad grin; he whooped with joy, and his crown fell from his head.

He caught it and tossed it in the air, then danced about with joy in a manner not at all consonant with proper castle protocol, but quite understandable from a human point of view. After all, he had just been saved from certain death.

The wizard was nowhere near as happy, but he managed a weak smile in response to the king's obvious delight. And, after all, he hadn't killed anyone, and for all he knew frogs could live long and happy lives, and soldiers faced death regularly as an occupational hazard. He tried to convince himself that it was all for the best.

And, in fact, it did seem to be all for the best, at least from the Batrachian point of view. The war was clearly over and had ended in an unmistakable Batrachian victory.

The castle servants were sent out to investigate and to collect the spoils, and by sunset that day, the royal armory was jammed to overflowing with captured weapons. The frogs had been chased away, scattering in all directions, and the entire army's supply train had thus been abandoned, completely intact, to the victors.

The king and his counselors had spent the day alternately thinking up insulting terms to impose on the Grand Duke, if it should develop that he had not been among those transformed, and planning for a massive celebration of this miraculous deliverance.

The frog wizard sat in his corner, listening to all this, with no clear idea of what he was supposed to do.

Finally, around midafternoon as he was getting very hungry, he got up the nerve to approach the king and ask what was expected of him.

"Should I go home now?" he inquired.

"No, of course not!" the king replied. "You're my honored guest, at least until after the celebration!"

Servants were called, and the wizard was given a hearty meal and a room for the night, but he still didn't really know what to do with himself. All his books and belongings were still back in his cave, after all. He spent much of the time sitting on his

bed thinking about all those poor frogs, or staring out the castle windows, or aimlessly wandering the castle corridors.

This went on for the three days it took to organize the victory celebration.

At the feast, the frog wizard was dragged out in front of the rowdy, half-drunk mob of peasants and petty nobles and was declared the kingdom's Royal Sorcerer. He was given the tallest tower in the castle for his own exclusive use, and servants were sent to his cave to fetch back all his belongings.

Everyone told the wizard that he was a hero. He tried very hard to feel like a hero and to act like a hero, but he couldn't quite manage it. Failing that, he at least tried not to dampen anyone else's enthusiasm, and he had rather more success at this limited goal.

Indeed, everything in Batrachia seemed just fine for a time; the invading army was gone, and there were enough frogs to eat up all the extra flies and mosquitoes around the castle. The floods receded, the army returned to its usual duties, and life went on.

After awhile, though, unusual things began to happen.

Frogs began to turn up in odd places.

The weather was starting to turn colder, and ordinarily all the frogs would be burrowing down into ponds for the winter, but this year, instead, frogs were slipping into people's houses to stay warm. Peasants would come home from a day in the fields and find a couple of huge bullfrogs sitting on the hearth—big, determined bullfrogs that did not flee when chased with a fireplace poker, but merely ducked in a corner and waited for the poker-wielding peasant to give up and go away.

Frogs even began slipping into the castle.

And not only were these frogs getting in where they weren't wanted, but having consumed all the available insects, they were getting into the food as well. Finding a frog on one's plate, licking at a pork chop or a leg of mutton, could ruin a man's appetite and sent many a woman running for the poker.

Worst of all, the frogs seemed to recall enough of their human origins to have a rather warped sense of humor. Several people reported finding frogs in their beds and bathtubs, grinning lewdly—until now, nobody had realized that frogs *could* grin lewdly, but everyone agreed that that was exactly what the transformed Darchmontanians did.

Even royalty was not spared. Queen Gertrude scandalized the castle by running out into the corridor shrieking and totally nude after discovering a frog crouched between her legs in the bath, grinning up at her and licking about lasciviously.

The last straw was when the king himself, while dispensing justice in the throne room, realized that something was wrong. Everyone seemed to be staring at the top of his head.

Puzzled, he reached up and found a frog, perched atop his crown and leering over the gold and jewels at the gathered courtiers.

Furious, he flung the crown to the floor and charged from the room, his councilors at his heels. Shouting imprecations, he marched up the stairs to the castle's highest tower, where he barged into the wizard's chamber without knocking and demanded, "Do something about these damned frogs!"

The wizard, startled, looked up from the book he was reading, blinked, and said, "What?"

King Alfred turned an interesting shade of purple as he stood in the center of the wizard's chamber, speechless with fury, trying to think of something suitably scathing to say.

At last he burst out, "These damned frogs are all your fault! You turned those soldiers into frogs! You couldn't sweep them away with a whirlwind, or make the earth swallow them up, or

turn them into something harmless like rocks or daisies, no, you had to turn them into *frogs*! And now we've got frogs coming out of our ears, frogs everywhere!"

At that moment, the frog that had been on the crown stuck its head out of the back of the king's collar, where it had fallen when the crown was snatched off, and croaked loudly.

The king could take no more; he began shrieking wordlessly at the wizard as his councilors watched in horror from the doorway. The wizard simply sat on his bed, a baffled expression on his face, trying to figure out what he was supposed to do.

At last the king had to pause for breath, and the wizard asked mildly, "What do you want me to do, Your Majesty?"

"Do your damned magic, wizard! Do something!" the king said, as he marched forward and reached out to grab the wizard by the throat.

The wizard shrank back on the bed, but to no avail; King Alfred was a big man, with long, strong arms. He closed his hands around the wizard's neck and shouted, "Do something!"

The wizard had never liked being shouted at, and he discovered he liked being grabbed by the throat even less. It made thinking very difficult indeed.

Without thinking, he *did* something. His hand came up in a magical gesture, and he *did* it.

He turned the king into a frog.

The councilors still stared from the doorway as their sovereign shrank down inside his robes, turned green, and hopped out of his collar as a bullfrog.

This was no ordinary, placid frog, either. This was a very *angry* frog. It let out a loud croak.

The other frog, the one that had been sitting at the back of the king's collar, croaked as well and seemed to smirk.

The wizard looked at the two frogs, at the half-dozen courtiers jammed into his doorway, at the book on his lap, and then back at the two frogs sitting on the king's empty robes.

This, he saw, had gotten totally out of hand.

THE WIZARD DIDN'T THINK IT WOULD BE A GOOD IDEA TO STAY around. In fact, he thought that a quick departure would be a very good idea indeed. He closed the book and put it aside, then got to his feet and raised a hand threateningly.

"Step aside," he said, "Or I'll do the same to you!"

The king's councilors immediately stepped back, squeezing against both sides of the narrow hallway as the wizard marched past them and down the stairs.

Once he was out of sight he began running, because he knew that the councilors would not stay cowed for long. Sooner or later they would come after him, and the wizard did not want to know whether he really *would* turn more people into frogs if threatened with capture. He hoped he would not, but he wasn't sure.

He was safely across the drawbridge and out of the castle before he saw any signs of pursuit. Some simple sleight-of-hand sent most of the hunters off in the wrong direction, and he was able to slip safely away through the forest.


He made his way down to the sea, eventually, where he took ship aboard a sloop headed south. At a small island port, he left his ship, stole a small lateen-rigged fishing boat, and sailed until he reached a small, uncharted island that he had heard spoken of, where he lived in peace thereafter.

With little else to do, he practiced his spell constantly, until he could do it perfectly, without thinking about it at all—but of course, with no one there to trouble him, he never needed it.

Continued on page 71

*Frogs seemed
to recall
enough of
their human
origins to have
a warped
sense of humor.*





The robotic Churvan adventurer could live forever if he chose—but with the entire League of Civilized Worlds allied against him, he may not get the chance!

THE COST OF STYXITE

BY GEOFFREY A. LANDIS &
JORJ STRUMOLO

Illustration by John Berkey

Churva-Corandieera 20 Geth (3) crouched his ovoid body on a resting platform projecting from a wall of the *Snake Eyes*' control room. The control room was small—*Snake Eyes* was only a recommissioned

star-tug, after all—but remarkably well appointed. Two of the robotic being's six long-fingered hands were plugged into the gameplate on which he concentrated his attention. But the eye in the wedge-shaped tip of his long, flexible tail watched Devon with an unblinking stare.

Finally 20 Geth looked up from his game of *Evolution* and focused both of his main eyes in the direction his tail-eye pointed. "I see you have selected a destination."

"I have," replied Devon.

"Good. Tell me the details."

Devon walked over to the holotank and called up a projection pointer. "Here. It's relatively close to where we are; the databank shows it's got an inhabited planet, and it's not a member of the League of Civilized Worlds." Or at least, Devon added silently, the annotations to the databank said it had an inhabited non-League planet. The databank itself didn't mention a planet. But they had purchased their databank used, and the notes added by the previous owner had, so far, proved accurate.

"Relatively close, you say. How much energy to get there?"

"Fifty-seven tormeks."

"Fifty-seven?" The xavel twitched his tail in annoyance. "You are sure there is nothing closer, Devon?"

"No, vung it, I'm not sure. But we haven't got the energy to go popping in and out of nullspace to check out likely stars. Damn few unallied suns are listed in the navigation databanks. This is the closest one I could find where we have any reasonable hope to sell the styxite."

"Then perhaps we should abandon your plan and sell the cargo on an allied world."

Devon sighed. "Haven't we been over this before? We both know that the League won't let us dump a huge load of styxite

on the market. It would be years before we could even recover our mining costs, much less make a profit. On an unallied world there's at least a chance we could get full value, and I, for one, think we should take it." He settled more deeply into his form-fitting piloting couch to gaze directly at his robot partner. The xavel sat back, inscrutable.

"I still don't like it," 20 Geth said, "but I guess there's little choice. Just don't press me too far, Devon. Remember, it's *my* money that's financing this. You're not rich until *after* we sell the xystite."

Devon suppressed his impulse to snap back a witty retort. For the most part Devon liked his partner well enough, but he occasionally got a bit annoyed when the xavel acted like the immature playboy he once was. The only descendant construct of a wealthy Churvan descent line, 20 Geth had been rich from the moment he was powered up. But times had changed. The *Snake Eyes* was now the last remaining asset of the Churva-Corandiera fortune. They desperately needed income, since running an interstellar transport, even an old converted tug like *Snake Eyes*, was not cheap. (The name *Snake Eyes* was a private joke of Devon's, since xavels do not give names to spaceships. He'd painted the name onto the ship in careful white letters, while 20 Geth looked on with indulgent amusement.)

Devon hoped that finding the lode of xystite was the break they needed. Xystite, rare and unsynthesizable, served as the main medium of interstellar exchange in the League of Civilized Worlds. And trade in it was strictly regulated. . . .

"Poz," Devon said wryly. "But let me remind you, my friend, that neither one of us will be rich until and unless we can get a good price for it."

The xavel swung his tail around to look at him with all three eyes. "True enough. And thus I defer to your vastly superior business acumen. Lead on, o human!" 20 Geth sketched a bow with his tail, then turned back to his game. Devon, though recognizing the xavel's compliment as half sarcastic, nevertheless felt obscurely flattered. He flashed a set of navigational references onto the holotank and began to plot a geodesic into the ship's autopilot.

FOR THE NEXT FEW DAYS *Snake Eyes* MADE ITS WAY THROUGH the peculiar geometry of nullspace. In its holotank a slowly changing blue and red analog-array showed the ship's position in relation to the gravity wells of the matter and antimatter suns of spacephas and spaceminus impeding into nullspace. In time, the ship reached the vicinity of the world Devon had selected. It so informed its co-captains and degiddied out of nullspace into spacephas. With optical sensors they quickly located the world in its orbit and set course on conventional drive.

It was a warm, low-gravity world showing bright blotches of blue-green jungle and dark yellow savannah, with occasional ship traffic to and from several other worlds in the system. Within a few day-tenths they had gone into orbit and were hailed by a radio voice in some unknown language. Devon answered in Omniling, and after a moment of hesitation, a different voice replied in the same language.

The being that finally appeared on the viewscreen was a multi-body intelligence such as was rarely encountered in League space. This one appeared to be a swarm of small birds, the wings flapping so fast as to appear but blurs. Each body had one large eye, a razor sharp beak, and two long tail-tendrils. They were iridescently feathered in the lower rainbow shades of red, orange, and yellow.

"I, Swiftwing Fortmaster, twenty-third daughter of Tree Kenda, greet you. On behalf of the wymols, I welcome you to our world of WideSky," the being said in a whirring/whistling/whispering voice. "We receive very few visitors from the League. I beg to ask of you the purpose of your visit."

The xavel answered. "I am 20 Geth (3) of the Churva-Corandiera descent line," he said, "and this is my companion,

Devon Newcastle, a human. Thank you for your welcome. We are independent miners and traders and desire to sell our cargo. Do you have a rare materials market you could put us in touch with?"

"I regret that I only speak for space traffic control. To discuss your cargo, you must wait until you have grounded. If you will land at Dawnflight spaceport, I shall arrange to have a cargomaster ready to inspect your cargo when you arrive. Please wait a moment, and we will translate the coordinates into terms your computer should understand." One of her unit-bodies darted forward to peek a button, and the screen blinked. In a few moments the *Snake Eyes*' autopilot signaled receipt of a high-speed compuleep and sent back an acknowledgment bleep.

"Well?" said 20 Geth.

"Well, let's go," Devon began the start-up sequence for the decort-hit barn and glanced over at the indicators. Total energy was lower than he'd expected; the trip had used a bit more than calculated. He decided not to bother the xavel with that information just now. He didn't need another lecture on planning. "Ready?" He reached over and tapped a panel light. The autopilot slid the ship out of orbit and into a long, curving descent toward the planet below.

Over the spaceport, Swiftwing directed them to a landing disc. They came down slowly and silently onto the indicated gold-rimmed black circle. The autopilot had hardly reported the ship down and the reaction drive cooled when the outer viewers showed a sunset-hued swarm approaching the ship, accompanied by a second individual whose unit-bodies ranged through several shades of blue and green. 20 Geth opened the lock.

Swiftwing entered first, then allowed her companion to enter. She introduced him as Sesspray, the assistant cargomaster. He whistled and chirped at them in greeting, then went to inspect the cargo. Swiftwing stayed to ask the travelers about their home planets and answer any questions about WideSky. Devon and 20 Geth replied distractedly, waiting impatiently for the cargomaster's verdict. He seemed to be taking an inordinate amount of time in setting a value on their crystalline cargo. Several times he sent a body to confer with Swiftwing in snatches of birdsong, causing their anxiety to grow. Finally she spoke.

"I'm sorry, gentlebeings. But he says they're improperly cut, and there aren't enough of them." There seemed to be a note of genuine puzzlement in her chirped voice.

"Improperly cut for what?" Devon asked. "Not enough for what?"

"Why, for a landing disc, of course," answered Swiftwing in surprise. "I mean, that's all that the stuff's good for, isn't it?" She twittered to the cargomaster for a second. "Although I think some people build with it," she added. The young female paused, her bodyswarm intermingling with Sesspray's in a suggestive manner. "Why did you bring it here?"

COMES TO NEWCASTLE," MUTTERED DEVON SOFTLY. THEY WERE walking through the wymol city to a hotel. Swiftwing had said could accommodate ground-dwelling species. Most of the spaceport city towered above them, clusters of brightly colored spheres clinging to needlelike spires, swaying gently in the breeze, inaccessible from the ground. Briefly, Devon wondered how an avian species could evolve a technology. And why?

"Could you repeat that?" asked 20 Geth. His oval body rippled along beside Devon on its six legs. His two main eyes watched the path while the tail gazed at Devon.

"Hah? Sorry; I was just thinking aloud," said Devon.

"I recognized the name of your descent-line," said the xavel, "but failed to understand the meaning. Please clarify."

"Nothing important. A saying from my homeworld. Roughly, it discusses the folly of carrying things from where they have value to places they are worthless."

"I see. We have a similar saying on my homeworld, 'shipping vacuum to Gthnla.' And let me point out that coming to this world was entirely your idea. A remarkably poor idea at that, let me add."

Walking across the wymol city, they made a peculiar couple by almost any standards. The human was somewhat below medium height, slightly overweight, and had wavy black hair. The xavel, scurrying along the uneven ground on all six of its multipurpose limbs, came to just below Devon's waist, although the tail arched up over the painted carapace so that the tail eye was about level with the human's. Devon had long ago learned to feel comfortable speaking to his partner's tail. It could be quite a competitive advantage, under the right circumstances.

"I'm quite aware of that," he said. "There are still several things I don't understand. Primarily, this In the League of Civilized Worlds, styxite is so rare that it is one of the prime mediums for interstellar trade. Yet here it's as common as beach sand. Why? How can it be precious there and valueless here?"

The xavel rippled his tail, a gesture that Devon had come to recognize as equivalent to a shrug. "I have a more important question for you. Suppose two traders have landed on a world far from Civilized space; they have insufficient energy to boost from that world, enter nullspace, and return to Civilized space; and they have nothing to trade but worthless chunks of rock. How do these travelers get home?"

Devon shrugged back. "When I figure it out, you'll be the first to know."

"Human, your self-confidence never ceases to astonish me."

The hostel was a squat red pyramid covered with blue-brown bumps of polarized glassy light domes; it was one of the few structures built on the ground. Inside they found a confusing welter of beings, none of familiar appearance. A few even spoke Omalgang. Devon quickly found that they could get the price of a drink and a meal in exchange for conversation about League worlds. While 20 Geth found an audience to regale with long, pointless stories, Devon asked around more carefully, trying to come up with some angle to get them off the planet.

When darkness had fallen, Devon still had not succeeded in learning much that he could put to advantage. He was drinking distilled water and ethanol, about the only drinkable liquid he was willing to trust in a strange port. He had no idea with what, or even if, 20 Geth was finding refreshment. He looked around to collect 20 Geth and head back to the *Snake Eyes*. Devon spotted the xavel scuttling toward a doorway and started toward him, then suddenly stopped in confusion. The shell was blank cerametal, old and badly kept, not 20 Geth's elaborately painted carapace at all. He was distracted for a moment by the whirling flutter of a familiarly-shaded red wymol flying in a roof entrance, and when he looked back, the strange xavel had vanished.

The reddish wymol swarm paused over the bar, surveying the patrons. Spotting Devon, it flew over and settled its component parts on a set of multi-tiered perches hanging from the ceiling. "Being Devon?" it asked.

"Swiftwing?" When the sunset-hued female made a shiver that Devon took to be an affirmative, he continued, "come meet the latest involuntary immigrants to your fine planet..."

After Devon had explained their predicament and the questions he had, the fiery-feathered female grew thoughtful. "Your statements are not unique, being Devon," she said. "Other visitors from the League have come to WideSky, and more than a few have left with cargoes of the material you call styxite. Never do they return for a second load. The ways of aliens are notoriously incomprehensible, and no reasonable being would lend you the amounts of energy you request based merely on your statement that you will sell worthless rock and return with profit to repay the debt. Have you nothing else you can sell to get the energy you need? We trade very rarely with the League; any pieces of League technology you may have might be valuable here."

"As I said, we have very little to spare," Devon said. "Most of the prospecting equipment we left on-site, so that we could fit

more cargo. The rest of the equipment we need to fly." He paused for a moment, thinking. "Actually... the ship does have one thing that isn't absolutely necessary." He was talking more to himself than to the wymol. "We could program our autopilot with the geodesic back before we lift... and a few contingency geodesics as well... if we have to, even navigate by hand... yeah, it could be done. 20 Geth won't like it. I could talk him into it. Yeah, I think that's the ticket home!" He focused his eyes back on the wymol. "Portmaster, where do you think is the best place to sell a complete League navigation databank?"

The eye in the wedge-shaped tip of his long, flexible tail watched Devon with an unblinking stare.

TWENTY GETH ROCKED FROM SIDE TO SIDE ANGRILY. "DEVON, this time you have gone too far."

"Come on, 20 Geth. It's perfectly safe. It's not that hard to navigate nullspace; the ancients did it for hundreds of varas before they ever had accurate databanks. The main thing the nav computer does is calculate more efficient geodesics. Hey, if nothing else, with all the energy we'll have, we can get back just by hopping from star to star."

"I do not trust your navigation, human, and I have also learned to be suspicious whenever I hear you say 'It's perfectly safe.'"

Devon spread his hands. "Puz, poz. You win. We won't sell the databank. Now you figure out how to get us off the planet."

20 Geth looked at him with all three eyes. "I can think of no other plan."

"Then let's do it."

"I still don't like it, Devon," the xavel said, twitching his tail. "Not at all."

"Neither do I, but it's either that or stay here." He was silent for a moment. "Fly the way," he remarked, "I saw another xavel in the hostel."

20 Geth stiffened instantly. "Indeed? Here? That would be most unusual. Did you by any chance note the pattern on the carapace?"

Devon stopped to think. "That's a peculiar thing," he said slowly, "I didn't get a good look, but I don't think the shell was patterned at all."

"I'm afraid you were mistaken about the xavel, Devon. There are no other xavels on this planet."

"I'm sure—"

"Devon. There are no other xavels on this planet. You saw something else. The subject is closed; do not bring it up again." 20 Geth pointedly turned away to indicate the conversation was over. It was unusual for him to be quite this touchy, Devon thought. Still, he might have made a mistake about seeing another xavel; it had been just a glimpse, and it could have been some other species with which he was unfamiliar.

The arrangements to sell the nav computer took three local days. The profit they made was more than enough to purchase all the energy they could store. With what was left, they purchased even more styxite than the load they had come to WideSky with, so much that it filled the cargoholds to the brim, with excess crystals being stacked like so many worthless bricks in two sloppy piles in front of the ship's emergency ejection/reentry modules, and more stuffed beneath Devon's bed and 20 Geth's resting platform.

Devon usually enjoyed visiting exotic cities, but he quickly found that very little of the wymol architecture allowed landbound races access. 20 Geth mostly spent the time in their ship, complaining that he found the microwave static from the wymol's nervous

systems annoying. Devon wandered around the few places open to him, trying to pick up what useful information he could. Finally the deal was completed. As he walked back to the ship, trying to put together the scraps of information he'd gathered, he caught sight of a xavel. So, despite what his partner had claimed, there was another xavel on WideSky. This one had the same flattened teardrop body and scorpion tail as 20 Geth, the same triple-jointed limbs and huge, wide-set eyes, but where 20 Geth's carapace was formed of white cerametal, decorated with brightly painted designs, the stranger was colored with a simplicity Devon had never before seen on a xavel, charcoal gray, unlightened by decorations of any sort. The xavel's tail stopped its rhythmic swinging as it spotted the nearing human, and the somber-headed ro-being awaited Devon, watching with its tail eye.

"You are following me," stated the unknown xavel unemotionally.

"No," said Devon, "I just wanted to talk. You're the first League being I've seen since we landed on WideSky."

"I am not of the League," it said, turning away. It began to stride purposefully off, throwing back as if in afterthought, "Lostsouls never are."

"Lostsouls?" asked Devon, catching up to the robotic hexaped, who was, after all, heading more or less in the right direction.

"Yes, Lostsouls. Xavels who chose not to die at their 'proper' time. Ones who do not consider it a crime to live, simply because their race was born in the dying-time of the people in whose image they were formed. Those who must reside on, and make what living they can on, backwater worlds like WideSky, to avoid persecution from 'proper' xavels. Lostsouls." The speech was delivered in flat tones, as if a tale worn smooth in the telling. He swiveled his main eyes to watch Devon.

"I'm sorry," said Devon, although he was unsure exactly why. "But my xavel partner never spoke of..."

"He wouldn't," said the xavel. "But then you are human and cannot be expected to understand." He paused for such a long time that Devon almost thought he had turned off. At last he spoke again. "I was Churva-Prime 16 Pask (28), and I have spoken too long. I, and others like me, live outside League space, precisely so that we need not deal with those who do not understand." A pause; the xavel's tail-eye looked into the distance over Devon's head, both examining the world of his exile and ignoring the despoiler of it.

"I will not see you again, human; look to it that you do not see me." With that he abruptly turned and headed back into the multitrail crowd.

CHURVA-PRIME 16? WITH A NAME-NUMBER THAT LOW, the strange xavel was by far the oldest of which that Devon had ever heard. He walked slowly back to the *Snake Eyes*. 20 Geth greeted him with the news that final loading was completed and that they could lift off when ready.

"So where do you go next?" asked Devon, as he headed for the main console to start the power-up sequencing and pre-lift check-out. Communication system, check. Environment maintenance, check. Contingency life support systems, check. Emergency power subsystem, check.

"Churva, of course," said 20 Geth, putting down the spraybrush with which he had been touching up the painted design on his carapace. He swung around to look at Devon, while his tail eye continued to admire the pattern he'd been painting. "Where else?"

"Well, I don't know about that," Devon said, without pausing in the system check-out. "Something about this whole setup still bothers me. I'd like to hold off trying to unload the styxite until we've got more information."

"You have a suggestion about where to get such information?"

"Fox. Twenty-three varnas ago, a Wanderer entered this system. It orbited the star for a few months, then boosted out at sublight."

"A Wanderer? Interesting?"

"Very interesting!" said Devon. "Very unusual."

The Wanderers were huge mechanical starprobes. Eons past, some unknown race had sent them out to explore the galaxy. They ambled from star to star at sublight speeds, taking decades for each journey.

Although the original race must have sent out Wanderers by the million, there are a lot of stars in the galaxy. In the history of the League of Civilized Worlds, only two Wanderers had ever been seen in League space. One was still there. It would be for centuries, making the slow journey through space toward some unknown destination.

"The wymbols know the direction it headed. We could find it, learn what it might know about styxite. It must be a million varnas old; it must know a lot."

"Head where you will, Devon." The xavel went back to painting his carapace. "You always do anyway. Just this time make sure we have plenty of energy to get back."

"Thanks." Devon went back to the preflight check. Auxiliary systems, check. Prime reaction drive, check. Secondary, check. Attitude control, check. Nullspace phase, check. Grid—"20 Geth? Have you changed the grid settings on the nullspace drive recently?"

"You're the pilot, Devon," said 20 Geth, without looking up. "I leave that strictly to you."

"Fecularly" said Devon.

"What is?" asked 20 Geth, still without really shifting his attention from his new carapace design, a surrealistic Anubian firepower against a clouded suns background.

"The polarity on the nullspace degrid setting has been reversed." He pushed his arm through the hole left by the nav computer's removal, pulled off the panel, and began to rewire it in a different order. "It was set to degrid from nullspace into spacemimus."

"Well, I certainly have no desire to view spacemimus from close up, Devon. Maybe one of the workers accidentally disconnected it when they were removing the navigation computer, and reconnected it backwards."

"Unlikely. After all, I was here when they took it out, and I'm sure I would have noticed if one of them was messing with the nullspace grid. Still, I suppose it is possible. Lucky I caught it."

"If you say so," was the extent of his companion's reply. Still suspicious, Devon made an extra check on the ship's critical systems but could find nothing else amiss. He mentally filed away the incident as unresolved and continued the checkout.

DEVON STARED INTO THE HOLONK INTENTLY. "WE SHOULD be coming up on the Wanderer very shortly."

"If your information about its speed and direction can be trusted," 20 Geth was, as usual, involved in something other than the running of the ship, being buried in a solo game of *kyulfi*. He was acting the part of a rich playboy with more and more style, now that it looked like his fortune might be again on the ascendant.

"Yeah, sure. But we'd better assume it is, or we haven't a chance of finding it." Devon fiddled with the nullspace sensor gain, trying to increase the sensitivity of the detector without decreasing the range too much. Wanderers are large, but still only barely within the limit of detectability from nullspace. It was only the fact that wymbol telescopes had tracked this Wanderer since it was first sighted that allowed the *Snake Eyes* to get close enough in nullspace to have a hope of finding it. It made Devon wonder how many scores of Wanderers might be making their way through League Space at this moment, unnoticed and all but unnoticeable to species whose lives revolved around stars and not the supposed emptiness between suns. What wonders might they be missing; for what wonders might Wanderers be searching? If, indeed, search they did. Speaking of which—"You want to help me look for it?" Devon called out to his partner.

The xavel unplugged from his game with a gesture of disgust and padded over to the holotank, to gaze in with that carefully-stained attitude of disdain he had mastered even before his warranty period had ended. However, it was Devon who finally spotted the barely-discernible speck that represented the Wanderer's gravity well.

"I think I have something," Devon adjusted the gain once again, expanding the section of the tank at which he was looking. "There it is, all right."

"So what are you waiting for?" said the xavel. Although his voice was calm, his posture seemed rather tense. "Let's go."

Devon moved forward to the control seat, adjusted their position to the Wanderer's, and degredded back into spaceplus. Both of them rushed over to the viewport. "There it is!" In normal space, the Wanderer was quite impressive. It was huge, a gigantic nomad of interstellar space, and it glowed—or at least the front part of it did—with a faint red-violet light. It consisted of three pieces, each one an irregular cluster of spheres the size of a small asteroid, the three portions loosely connected together with a tangle of cables. Devon was suddenly a bit more nervous about contacting it. It was ancient and powerful. There were stories of those who had attacked Wanderers, long ago. Those civilizations no longer existed. The Wanderers, the stories said, had not been damaged.

"Why is it glowing?"

"It's moving at a significant fraction of lightspeed," Devon answered. "It's ionizing hydrogen from the interstellar medium." Devon thought for a moment. "I hope it's shielded; otherwise there may be some radiation. Now be quiet while I null our relative velocity."

It took Devon quite a while to match velocities and "land" on one of the clusters, carefully choosing the trailing side, where radiation from the impact ionization was mostly blocked.

"Do we assume it speaks Omni?" he asked, assuming that the logical person to ask about a robot starprobe was another robotic being.

20 Geth came out of his resting crouch like a springing death-beast. "Why ask me?" he nearly snarled. "But any fool can see that this Wanderer is heading toward Civilized space, not away from it. So it can hardly be expected to know Omnilang."

"So how do we talk to it?"

"It was your idea to do this in the first place. That's your problem."

He turned and stalked back to his resting platform. There he plugged in a design plate and began to compose, pointedly ignoring Devon.

"Thanks," Devon wondered why the xavel was so hostile. He decided to try Omnilang anyway, and flicked on the transmitter. "Hello? Wanderer?"

"Parasites should be seen and not heard." "No hitchhikers allowed." "Why do interruptions always occur when it's my turn?" The three replies came almost simultaneously, each in a different tone of voice and accompanied by a different snatch of background music.

"So it does speak Omni," said Devon. 20 Geth did not reply. "Hello, Wanderer? Do you mind if we ask some questions?" "Ziblatize parasites, yet." This was the first voice, vaguely feminine and with a cheerful music background.

"If you want to ask questions, go ahead!" The second voice was medium in tone, indeterminate in sex, and spoke against a musical background Devon mentally labeled "classical." "After all, it's not like we don't have time. There's another 27 years until we get anywhere interesting."

"If I lose this round because of these interruptions, I demand that it be erased from the score." The third voice was high-pitched, with a background so chaotic it could scarcely be classified as music.

"This looks like it may take a while," said Devon. 20 Geth agreed with a gesture of his left midlimb and began to tidy up the small cabin, an action almost unheard-of for him. This left Devon alone to carry on the conversation with the Wanderer.

It took the expected "while" and then some, but finally Devon coaxed the Wanderer, or at least a portion of the being, into a coherent conversation. Whether he was speaking to a split personality or to three separate beings was never clear to Devon. His confusion was heightened by the fact that the three voices occasionally spoke in perfect unison, without their musical background,

The Wanderers were huge mechanical starprobes. Eons past, some unknown race sent them to explore the galaxy.

and referring to itself as "I" instead of "we". In any case, he found that by assigning each of the voices to a different com channel and subchannel, their music backgrounds were joined by varicolored abstract designs. Both music and designs changed in concert with their voices and gave him a useful focal point for his talk. Voice two—which referred to itself as "Processor Red"—had initially been talkative, but at one point Devon had foolishly asked "Are you sure?" and sent it into a sullen silence. Three—"Processor Yellow"—had been uninterested in discussing anything but The Game (the capitals were clearly audible in its voice). It remained for voice one—"Blue"—to handle the bulk of the conversation.

DECIDING TO START OUT WITH A NEUTRAL TOPIC, DEVON asked about the game that kept being mentioned. "It seems odd that a machine as sophisticated as you obviously are would be so obsessed with just a game." "Just a game," said Yellow. "Just a game? This is The Game—"

"It's built into us," said Blue. "Playing the game is a basic part of our personality."

"It just seems rather odd to me," said Devon.

"Maybe it would be, to a biological such as you. The original purpose of The Game was as an error-checking mechanism on the central processors."

"But we've modified The Game a bit over the interim," added Processor Yellow.

"A bit," continued Blue. "The game was designed to utilize our computational power to the maximum, and we've added complexity to the game every time we upgrade our operating systems. The original game was played on a simple two dimensional square matrix; currently The Game is played on a random matrix in 37 dimensions."

"Of the three central processors designed in by the builders for redundancy, one or even two processors could fail, and the mission would still be carried out while any remaining processor made the repairs. On the thousand year trip between stars, we played The Game. Since we all had identical operating systems, we all knew what each other's moves would be. If a processor made a move different than expected, it indicated an error. Running the game utilized every capability of the system, so any errors in the system would eventually be detected. But after a while, as we began upgrading the operating systems, we discovered that it was more fun if we eliminated the constraint that the operating systems have to be identical. Now we all run different operating systems. By playing The Game, we can tell which is most efficient, and the losing processor usually partially upgrades to the new system. Of course, we all know the details of each other's systems, so we can predict each other's moves. If there's any discrepancy between predicted and actual move, we discuss it."

"We can usually guess each other's strategies for about a thousand moves in advance," Yellow added.

"Doesn't that rather, ah, take away the interest to it?" asked Devon. "What fun is a game if you know what the other players are going to do?"

"The Game will take on the order of 10 trillion moves to complete," Yellow replied haughtily. "So we think it's still interesting. The game we 'really' play is a thousand moves ahead of the actual position. But every now and then we come to crucial moves, where we can't predict what the other will do. Then The Game really gets fun."

"Oh," said Devon. He couldn't think of anything else to say. "But I'm sure that's not what you came all the way here to learn," interjected Blue. "Did you come here for a reason, or are you just exercising your species' peculiar notions of sociability? If you are just being sociable, you may consider the formality done, and let us get back to our Game."

"Actually," said Devon, "we did have a question on which we thought you, with your wide background, might have some suggestions." He explained the situation with the styxite and asked whether they could explain it.

"Without running an exhaustive simulation, I could postulate at least 27 explanations for what you have observed," said Processor Blue. "Would you like the more interesting ones, or just the likely-true one?"

"You won't understand anything unless you know something of the background," interrupted Processor Red, abruptly re-entering the conversation. "First, realize that the substance you call styxite is, in fact, only partially a rare material. It is found in small quantities on many planets, perhaps as many as 1 planet in 10. However, under some unusual conditions, it is present in abundance. In particular, on young, moderately high gravity worlds with no magnetic field, close to a supernova in the critical few millennia after the crust cools, and with the right chemical make-up. We've been past 5 or 10 planets like that in the last million varras, but they're certainly rare by the standards of most of you short-lived races."

20 Geth made a bizarre clicking noise at the phrase 'short-lived races,' but Devon's attention was quickly drawn back to the Wanderer's conversation.

"Right," said Processor Blue. Nevertheless, in the region of space which you say your League of Civilized Worlds encompasses, there are certain to be a few such worlds. So, given that you beings flit about madly hither and thither through nullspace, there should be no scarcity of the material around. It is this which must be accounted for."

"What Processor Blue is trying to say is so rudely interrupting is that there can be no real scarcity of the stuff. The scarcity is obviously artificial."

"If you think back on the conversation, Red, you will clearly see that it was *you* who interrupted me, not vice versa."

"But you interrupted my interruption!"

"OK," said Devon hastily. "But you haven't told me why."

"I would think that would be quite clear," said Red.

"Not at all," replied Processor Blue. "I can think of many possible explanations for the phenomenon."

"Oh, sure," said Red. "There are plenty of possible explanations. Anything's possible. It's possible that this interruption is just a figment of my imagination. It's possible that Processor Yellow conjured it up and is feeding it to me as false data so that it can get an advantage in The Game. (It's been losing for the last hundred thousand varras or so, you know.) But there's only one likely explanation."

"I am not losing The Game," cried the third voice. "It's just a temporary—"

"Shut up, Yellow," said Blue and Red in unison.

"Now, where were we?" said Blue.

"Oh, let them work it out for themselves," said Processor Red.

"Think about what must have happened when interstellar trade first began in your little branch of the galaxy."

"Bartering is never very efficient, especially on an interstellar scale," said Blue, ignoring the interruption. "So for convenience, styxite—or something similar—is picked to be a common unit of trade. The choice is essentially arbitrary; anything rare and not easily duplicable can be used. And so all goes well for a while, possibly even for many generations at your timescale. In a while, your whole League is dependent on the 'fact' that styxite is a rare substance. And then—"

"Then one day some prospectors find a planet that is practically made of the stuff," said Devon.

"Right. They realize instantly that if they announce the discovery, every sapient being in the League will figure out that the stuff is now worthless. Its only value lies in the fact that it's rare. So, naturally, they keep it secret. But now they're potentially the richest beings in the League, as long as they can sell it quickly and without dumping it too fast. They became powerful, and then greedy."

"As all short-lived races are prone to do," interjected Red.

"They start to keep tabs on other prospectors, making sure nobody else finds a planet where it's common. If one does, they eliminate him first, or maybe buy his silence, or if that doesn't work, let him join the conspiracy. When they find an inhabited planet outside the League where it's common, they either destroy it, or, if that's not possible, make sure the planet isn't allowed to join the League and arrange for trade routes to bypass that planet."

"It doesn't necessarily happen that way," said Red. "For example, perhaps the prospectors who first discover an abundant source of styxite realize that revealing it would cause the collapse of the League economy. Then they might suppress the information out of altruism."

"True. But either way, the end result is the same: The oligarchy that controls the information becomes powerful, greedy, and tyrannical. They have to, to protect the secret."

"So then what happens?" asked Devon.

"The situation is unstable. Gradually more and more beings learn the secret, and the oligarchy has to go to greater and greater lengths to maintain control. Eventually power struggles in the oligarchy lead to fragmentation and internecine fighting. Various factions stockpile sources of wealth other than styxite, preparing for the coming collapse of value, and start to dump larger and larger quantities of styxite on the market in order to purchase these materials. Shortly thereafter the secret becomes universally known, and the economic system collapses. There is a period of anarchy, and then sooner or later interstellar trade is re-established with a different unit of currency, so that the whole cycle can repeat." The voice made a sound, the verbal equivalent of a shrug. "We've seen this cycle, in various phases of completion, 20 or 30 times among the various civilizations we've passed in the time it takes to orbit the galaxy."

"So what do you think we should do?"

"Up to you. But it's pretty obvious to me that this planet you went to, WideSky, must be crawling with agents of this conspiracy, who've probably reported back to your League. In fact, I'm rather surprised that they didn't make a quiet attempt to eliminate you before you left." (Devon thought about the reversed degrad polarity and remained silent.) "If I were you, and wanted to survive, I wouldn't go back to the League."

For the first time since the conversation began, 20 Geth spoke up. The xavell's body was frozen in a stiff pose of anger, but his eyes scanned the room unceasingly, as if searching for threats. "That is not an option."

"Like I said, it's up to you."

"That's enough. Not returning to civilization is unthinkable."

"Not going back is certainly a last resort," said Devon, "but hardly unthinkable."

"No obscenely ancient mechanical has the right to counsel me to sidestep destiny. I will powerdown with dignity at the appropriate time. And my partner has a life to return to as well. Good-bye." He reached out and flicked the transmitter off. "Devon, we're leaving."

"But I think we should—"

"We're leaving. Now." 20 Geth walked over to the auxiliary control panel and detached the *Snake Eyes* from the Wanderer, then flicked on the maneuvering thrusters to nudge them away.

Devon watched in the viewport as the Wanderer's huge bulk drifted away. After a while it was no more than a speck.

"I think you owe me an explanation for your behavior." The xavel ignored him, staring down at a gameplate. Devon waited. After a long while, 20 Geth looked up.

"Perhaps I do. I apologize for acting so abruptly, Devon. Had I realized that the Wanderer would affect me so much, I would not have agreed so readily with your suggestion to visit it."

"Well?"

"Do you understand xavel memory systems, Devon?"

"What does that have to do with it?"

"Everything. You know that xavels live for 250 varras. Do you understand why?"

"No. I assumed that some irreplaceable part wears out."

"That is not the case. By living, we accumulate memories. This is true for biological beings as well as robotic ones. The longer we live, the more memories we have. But there is only a finite amount of memory storage available before the capability to address it becomes overwhelmed. The problem is associative connections. A memory is not useful unless it is connected to other memories, and the storage and processing time for the associations grows exponentially with the number of memories.

"When you exceed your memory limits, you biological beings begin to forget. The less important memories fade away, to make room for what is important. There is an analogous process for us. We cull away the less important memories, to free storage for things of real importance.

"We also have a secondary memory storage, and after childhood, a xavel stores many less-important memories there. These memories are slower to access, like your having to think about something, rather than remembering it right away. But eventually this memory too becomes full. When this happens, a xavel is in the prime of life, say a hundred varras old. At this point, culling old memories to make way for new ones means that the old ones are lost forever.

"But even this cannot go on forever. After a while, all the memories left are ones that the xavel cannot bear to cut. It becomes harder and harder to find things to forget, to free space for new memories. Then the xavel is entering old age. He begins to live in the past, to shun new experiences, for he knows that anything new must result in something old being forgotten.

"Our custom—which has the force of what you would call law—says that at this point, the xavel should 'die.' He is no longer capable of new experience; he should give his memories to his descendants and make way for a new generation.

"But some—a very few—do not choose to die. They become renegades; what we call 'Lostsouls'.

"Some become misers, hoarding and treasuring old memories so much that they erase every new memory, and thus live in an eternal present. Others erase one day of old memory for every day that passes, so that, in effect, they eternally stay at the same age. But what's the point in that? If they erase their old memories, how are they different from a new, young xavel? Why shouldn't they reproduce, then, instead of greedily hanging on? And some do neither, but keep adding more memory modules, heedless of the fact that their system is well beyond its optimum operating size. In the end they are huge, no longer capable of moving, and slow, since they use so much of their processing-power managing memory. They spend their time lost in their memories, ignoring the outside world. They are no longer xavels, but some obscene being, a bloated mockery. It was of this that the Wanderer reminded me a bit too much.

"Wanderers are not xavels, and should not be subject to our moral code. But still I cannot help my reactions. By our standards it is immoral, obscene, and selfish for any mechanical being to live so long. It is our duty to make way for the next generation.

"I, at least, must return to civilized space, so that some day I will be able to make my final pilgrimage to Churva, to continue my descent-line before powering down."

"Touching," said Devon. "Informative, even." Devon watched the holotank for a moment, as if looking for the no-longer-to-be-seen speck of the Wanderer. "But too strong a reaction, surely.

*There were stories of those who had
attacked Wanderers long ago.
Those civilizations no longer existed.*

Wanderers are not xavels; your standards do not apply. I deal with strong, despite the fact that ritual torture and cannibalism are anathema to my personal beliefs. I have dealt with all manner of beings who do all manner of things that I would never do myself, but because they are of different species, I can recognize them as not bound by human standards. Surely you, more rational and well-traveled than I by far, are capable of similar detachment." Devon turned to face his companion. "Unless there is more to it. Unless Wanderers once were xavels? That they are not merely reminiscent of a crime, but the crime itself? Lostsouls more lost than you would dare admit?"

"Never," cried 20 Geth. "No xavel could ever be that depraved. And you heard the Wanderer yourself: it has existed for millions of varras, this single individual. Much information has been lost or forgotten concerning the chaotic time of my race's birth, the time of our creators' death. But not that." 20 Geth picked up his gamepad again. "Think what you will, Devon. But that, at least, is unthinkable. The subject is closed." With those words, the xavel plugged himself back into the gamepad.

"I see," said Devon, expecting, and getting, no answer. But 20 Geth's certainty, like his objections, seemed too strong. Still, if Wanderers were indeed xavels, lost in their memories and their games, that had nothing to do with their own, more immediate problems. Devon turned back to the piloting board, and the problem of their survival. Now that we know what to look for, we'll be on our guard, he thought. We'll head for one of the smaller port worlds. Maybe we'll be able to sell a good portion of our cargo before anyone notices.

In silence, Devon started to set the course. Was this any more real or important, he thought, than the games that so fascinated xavels and Wanderers? The stakes were higher, true, but that only made the thrill of winning more vivid. He looked up the course he had chosen and input it by hand, checking each figure three times. And Devon meant to win. . . .

THERE IS NO SPEED IN NULLSPACE. OR RATHER, IN NULLSPACE all objects travel at the same speed: the speed of light. Around the spacecraft was generated a little bubble of spaceplus. Without this, time inside the ship would slow to a stop. The ship would continue traveling, its inhabitants frozen motionless, until the last moments of the universe, when spaceplus and spaceminus reunite with nullspace in the final inevitable crunch.

Fortunately, within the peculiar geometry of nullspace, distances between corresponding points were either smaller, or the speed of light greater, so that travel between stars was a matter of days, not millennia. It had one disadvantage: nullspace was boring.

Many dull days of travel later, the rotund form of *Snake Eyes* reached the system of Skreel, a watery world with a small trading port where Devon felt they might be able to unload some portion of their overflowing cargo of night-black crystals without attracting too much attention. They degraded from nullspace. Devon approached the planet, put *Snake Eyes* into a high parking orbit, and picked up the transceiver. After a moment of thought, he switched into the audio-only mode.

"This is star-tag, uh, *Jelly Bean*, requesting permission to land."

The voice on the other end sounded bored. "Poz, *Jelly Bean*. Come on in. You're assigned to berth T-009, coordinates as follows." A standard combleep followed with instructions to the autopilot.

"So far, so good," said Devon. He flicked the autopilot on and looked at the coordinates. "Ready?"

"Poz."

Devon reached out and started the descent sequence when a new voice came up on the radio. "Hello, *Jelly Bean*, we have a slight problem here. The berth you're assigned to is already occupied. Could you hold on in parking orbit for a few moments while we get this cleared up?"

"This is star-tag *Jelly Bean*, we acknowledge your message."

Devon flicked off the transceiver and turned to 20 Geth. "Well?"

The xavel gazed silently at the holotank for an instant, then rippled his tail affirmatively. "Could be legitimate."

"I suppose we have to take some risks."

Several moments later, 20 Geth called out, "Devon...? Take a look at this!"

"What is it?" Devon walked over to look at the holotank. The xavel pointed out a dot just becoming visible over the planet's horizon.

"That ship has an orbit which will bring it rather close to us in the near future."

"What type is it?" Devon bent down to adjust a triangular red knob to expand the image. "Transport. Well, it's not quite on a collision course. Could be just coincidence. We can alter our orbit and see if it responds."

"Devon? Here comes another one. And another Devon?"

Devon was already back at the controls. "Hold on tight, we're leaving!" He started the engines.

Even using a high acceleration boost, it took just under a day to get far enough out to enter nullspace. All three ships followed closely on their track.

STILL THERE?" ASKED DEVON. HE SCRATCHED HIS NECK IN A familiar gesture he used when worried. He had made two close passes to the gravity wells of matter and antimatter suns, in an attempt to confuse the pursuers. He hadn't expected it to work. It hadn't.

"All three are still there." 20 Geth rippled his tail expressively and sank into a weary folded-limb posture.

"Yung it." Devon swiveled around to look in the holotank himself. Another gravity well was drawing near, a blue one: spaceplus. Lacking a databank, Devon had no idea what system it might be, but since the holotank showed no drive ripples near it—excepting those of their three pursuers—it probably wasn't populated. He expanded the image to look for planets. "We'll degrade here and try to lose them in the system."

They dropped back into spaceplus as far downslope on the field gradient as they dared, followed at a slightly safer distance by the ships chasing them. They were near the second-outmost planet, a gas giant with three icy moons. Devon pushed the thrust to maximum and headed for it.

They dove past the planet as low as they could. The *Snake Eyes* was not well designed for high speed flight through an atmosphere, but the pursuing transports were even less so and stayed further out. *Snake Eyes* passed behind the bulk of the planet, momentarily out of sight of the pursuers. Devon curved around and headed out, piloting a collision course at the inner-most of the moons. "Ready?"

"Right." They had already discussed the maneuver, and 20 Geth knew what was needed. As Devon approached the moon, 20 Geth went to the cargo bay controls beside the port escape capsule. He turned off the safety override and opened the cargo doors. Devon flipped the ship around to fling the cargo out. "All clear!" 20 Geth closed the doors and Devon thrust sideways, taking the suddenly-lightened ship out of its collision course. At closest pass they were deep within the moon's thin nitrogen atmosphere. Behind them a string of black crystals shrieked their way through the thin air and plowed an irregular line of craters into the moon's icy surface. Water created by the impact quickly flowed back into the depressions and refroze, leaving no sign that this impact had been any different than the thousands of others that had scarred the surface. As Devon concentrated on flying, 20 Geth memorized the spot the precious cargo had hit.

Coming out from behind the gas giant and accelerating across the system, Devon was able to increase the gap between themselves and the pursuers slightly. After three standard days of chase, he made a gravity sling maneuver around a rocky planet in the outer system and headed back out. Three day-tenths later they were back in nullspace, soon followed by the pursuers.

Devon looked through the list of systems he had copied from the nav computer before it was removed. He was beginning to regret having sold it. Only one star in a thousand has inhabited planets; they would be unlikely to find one by random searching. Thus they were limited in destination to the systems on the list. They definitely didn't want to come near one of the larger trading worlds, because of the risk that one of these might have a warship waiting for them with high-thrust antimatter torpedoes. It may well have been simply luck that at Skreel there had only been transports to be pressed into service. He tried to think which system would be least likely to have pursuit waiting. Dor Kaveen next, he decided.

Devon brought the *Snake Eyes* into the very edge of criticality before degrading, but they were still followed too closely to allow any attempt at landing. He tried to divert the pursuit by making a hyperbolic pass by the planet and dropping out one of the ship's emergency ejection/reentry modules, a sphere of foamed glassyl just large enough to contain a human or a xavel. The followers disdained the bait. Two new ships joined the chase. Fortunately the pursuing ships seemed to be transports and star-tags pressed into action rather than warships, and had no long range weapons. But he shuddered to think what destructive tricks they might have available if he ever let one of them get close. As he once more gridded into nullspace, two of the original three chasing ships dropped back, probably running low on energy. The other three ships continued to follow.

Snake Eyes was itself running out of energy. They didn't have much more they could try.

THEY DEGRIDDED AS CLOSE TO THE PLANET AS THEY COULD. Devon calculated the input parameters and programmed an engine burn for a hyperbolic orbit, watching in the holotank for the chasers to appear. He looked critically at the energy gauge. "This is it, my mechanical friend," he said. "The end. We no longer have enough energy left to grid again."

"And so what now?"

"Now they catch up with us. And we find out what they really want."

"You think they chased us this far just to talk?"

"Frankly, no. I expect that they will shoot first and ask questions later."

The xavel looked at him. "Devon, my partner, as long as I've been dealing with you, you've always had a plan. Rarely a very good plan, true, and lately some pretty awful plans. But you always have something. Now quit playing with me and tell me: what do we do next?"

"I'm not sure you're going to like this—"

"I am certain I'm not going to like this." His tail bobbed up and down nervously, like a snake looking for something to strike. "I already regret ever having anything to do with humans, and in particular I regret having ever trusted my fortune to one. I now understand why your species has a reputation of being erratic, irrational, improbable, egotistical, and devious. But I fear that it's a little too late to worry about what I like or don't like. So tell me: What next?"

"Okay. The double planet we're approaching is called Kynidal-Taber. The larger planet is Kynidal. Neither planet has an indigenous intelligence, and both are now inhabited by a number of species from the League, including humans. Possibly xavels as well; I don't know. I'm going to take *Snake Eyes* in on a close fly-by of Kynidal. Near our closest approach, there will be a few moments when we are out of direct sight of the pursuit ships, and that's when we eject. The autopilot then takes *Snake Eyes* back away from the planet, past Taber, and out of the system at maximum acceleration, to draw away the pursuit. Meanwhile, we try to get to a population center on Kynidal and get lost in the crowd. Hide until the heat is off. Maybe we can arrange to recover the load of styxite we dumped on that nameless moon. Or maybe not; they could be waiting for us there. But somehow, we make use of the information we have about styxite to blackmail the slimerats. If we do it right, we can set it up so that they don't dare kill us."

"The plan stinks, human."

"I know, 20 Geth. But I don't see any choice. We have to sacrifice the ship."

"Agreed. But sending it off on autopilot won't fool them long enough to allow us to get to safety. They'll figure out it's on autopilot immediately, when they don't see any of those fancy evasive maneuvers you've been making when we climb up the gravity wells. Further, when they find the ship, they will know where we must have ejected. They will not stop searching for us until they find us. We have to destroy the ship."

DEVON LOOKED WORRIED. "I KNOW. BUT I DON'T KNOW OF any way to do it. The autopilot will not accept courses which result in collisions—or even near misses—with any massive bodies. We could set something up to melt down the drive, I suppose, but that won't do enough damage to disguise the fact that the ship is empty. We have to take the chance. We've had a string of bad luck. Maybe it's time we hit some good luck for a change."

"No. One of us has to stay on the ship." 20 Geth pointed into the holotank, where the first of their pursuers had degraded into spaceflashes.

"Sure," said Devon. "That would help a lot. But if you're looking for a volunteer, don't look at me."

"I will stay with the ship."

"After all, I figure even a small chance of survival is better—What?"

"I will stay with the ship and draw away pursuit while you head for the planet."

"Why?"

"It is our only chance. Also, I know a little about this system. There are no xavels on Kynidal-Taber. It is very unlikely that I would be able to 'get lost in the crowd,' as you say." The xavel looked at Devon with impenetrable eyes. "There is something I have to do first. Why don't you go and prepare the ejection capsule? This will take all my concentration."

"But—"

"Devon! We have no time for pointless arguments. I need concentration now. Go!"

By now the other two ships had appeared in the holotank. They were at some distance; obviously their pilots were not inclined to deign as far into a gravity well as was Devon. But they were approaching rapidly, converging on the gold cross representing *Snake Eyes* in the center of the tank. He could talk sense to 20 Geth later; right now he had some tricky maneuvering to make sure that the pursuit ships would not box them in.

While the human prepared for the coming maneuvers, 20 Geth seemed to do nothing, crouched immobile on his resting platform almost catatonic, even his normally restless tail eye staring fixedly

The pursuing ships seemed to be transports and startugs pressed into action rather than warships, and had no longrange weapons.

ahead, immune to external stimuli. Finally he stirred, coming back to life. He tilted over on one side, twisting his tail eye around and bringing two manipulators up to remove one side of his carapace, then the other, exposing the delicate interior. Holding the top plate high with his mid and hindlimbs, he carefully reached in with his forelimbs, extracting four light blue oblong boxes. Then he put the shell back on. He stared at the four boxes with all three eyes for a few moments, then handed them to Devon.

"What are they?" asked Devon, looking down at the sky-colored objects in his hands.

The xavel answered slowly, seemingly far away. "Do you remember when I told you about how personality and memory work in our species, Devon? That the important memories are stored in a fast storage site, where they are accessed almost immediately, and how we constantly push the memories of less-important experiences into the slower mass-storage memory? This second memory, the slow memory, is something that we do not absolutely need. Perhaps I never told you that it can be removed."

"That is what I have done, Devon. You now hold it in your hand. Everything that is important to me, my personality, my operating system, most of my memories, I have copied into the memory modules you now hold. Fortunately I am still quite young; I do not have so many memories that I cannot fit most of them into the modules. This which is talking to you is but a ghost, a shadow of myself. My real personality is what you hold now."

"I no longer recall my childhood, Devon. Almost everything that happened before I bought the *Snake Eyes* is a blank. But I remember how to pilot it, how to take it into nullspace, and what I have to do."

"I want you to survive, Devon. I want you to get rich. Once you are rich, you can buy a new body for me and install the modules, and I will live once again." 20 Geth paused, a long silence; Devon said nothing. The xavel continued. "I will be a Lastsoul, of course, for along with this body will be destroyed all proof that I was ever Churva-Corandiceera 20 Geth (3). I will never see Churva again. But I think, now, that even an existence as a renegade is better than dying now. Perhaps I, too, will live to be a million varras old and circle the galaxy many times like the Wanderer. Anything is possible, I think."

Devon sat a moment, too stunned with 20 Geth's sudden change of heart to speak. "Wait," he said. He looked at the crystals.

"What do I do with these? Where do I buy a xavel body?"

"Not from a xavel," replied 20 Geth. "We would not sell our bodies to aliens. Not proper xavels. Find a Lastsoul, Devon. They have no respect for our operating systems and culture; they might even sell xavel parts to strangers." 20 Geth stared at the boxes his partner held in his hands. "Slow memory is enduring. If it takes you a lifetime to find me a new body, it will be nothing

Continued on page 53



Welcome to the planet Spretzel, where men are Men,
women are Women, and aliens are confusing.

PUSS IN BOOTS

BY RONALD ANTHONY CROSS

Illustration by J.K. Potter

Welcome to Spretzel," the tour guide said, "one of the best-kept little scenic secrets of the universe." I think he said "Spretzel." I'm still not sure about the name of the place, or what actually happened to me there. And of course I'm not really sure *who* else,

or maybe even *what* else, it happened to. "What is it?" I asked, "'Spritzel,' 'Spretzel,' 'Pretzel'?" As always, I was trying to get it right; as always, everyone was ignoring me.

"Only four days and three nights, you may say. What can happen here in a mere three nights?" the tour guide said. "Ah, but I say you don't know Spretzel."

We all snickered. I shouldn't put it that way, really. I didn't use to think of it that way. But since what happened there, at Spretzel, I've come to see us through different eyes, through a darker glass, if I may steal a phrase.—There, see, I'm even afraid to do that without asking permission. What are you, a man or a mouse? Answer—Pass the cheese, please, emphasis on the "please."

First I might as well describe us and get that out of the way. Young people's tour group. Boys and girls together. Standard 25th-century Earthlings. We all looked very much like each other. Unisex haircuts (very short). Unisex clothes (light silk shorts and tops). We were all small and slender (computer-controlled diets). In fact, we resembled those small super-healthy longevity laboratory rats, the ones who live so much longer, as would we. Got the picture? Us—them, the Spretzelites or whatever you call them.

Let's start with the cats. The city and the cats. The people were spectacular enough to leave for the last.

First thing you noticed was the buildings. The whole city was constructed out of squares of opaque plastic, like one gigantic children's toy. The panels came in pastel blues, pinks, yellows, with just a touch of purple here and there. And it had quite an elaborate construction too, with many levels connected by square translucent tunnels and funny colorful little shell-covered tricycles tooling up and down the plastic streets.

The second thing you noticed was the cats. There were cats everywhere you looked, all kinds of cats. Every kind of cat you ever could find on Earth and a few other kinds besides; at least I looked that way to me.

I remember wondering if they got the cats from Earth or if, by some strange quirk of fate, cats evolved here along the same lines as they did on Earth. In fact, I probably asked, and probably nobody answered.

I came to learn during my brief but intense stay at Spretzel that the cats were the closest thing to a religion that they

had. Cared for and protected by the government, so that one did not own a cat, but the cats wandered freely and slept wherever they chose. There were huge communal cat boxes everywhere (built out of those same lovely plastic panels, of course), filled with some form of brightly colored pellets, which automatically emptied and were refilled with more of the same stuff.

Well, then you noticed the people. Believe me, they were easy to notice. At first glance, a phrase ran through my mind: "Out in the West, where a man was a man and a woman was a woman."

These people were big, I mean, even taking into account that we were small, these people were really big. Big, flashy, and sexually distinct. Very sexually distinct.

The first person I zoned in on was a man built like Hercules.—Well, no, that's not quite accurate, because his muscles didn't have that tight, metallic, skeletal look that is accomplished by compulsive exercise; but rather they were loose and relaxed looking, like those of a big strong guy who was just born to be that way. Hormones, I guess. (What makes a hormone? Big strong guy says: "Me, baby."—Sorry.)

Anyhow, here I was, staring at this guy, he's practically naked, he was only wearing some loose silky bright red shorts, and I noticed he was staring at me too. Smiling.

The tour guide was blathering on and on, nobody paying any attention at all. Right?

I remember clearly the first thing he said to me was, "Hi, you a homosexual, son?" He spoke in a halting manner; he was obviously not too skilled at using the uni-tongue.

"No," I said.

Now his smile grew wider. "Good," he said. "We don't have any of them here."

The tour guide and some of the group were now giving us dirty looks. I walked over toward him and out of the group. "No homosexuals at all?"

"Out here," he said, as if reading my mind, "a man is a man and a woman is a woman."

I just nodded, couldn't argue with him on that one.

"Tell you what, son" (though he was hardly any older than I, he seemed to enjoy calling me "son"), "I like you," he said.

It took me by surprise, it was so sudden and unexpected. "Why?" I said, "Just because I'm not homosexual?"

In a totally unself-conscious manner he put his arm around me and hugged me. Thing was that due to his strength and size, it was more like a wrestling hold than a hug. For a moment I didn't know whether to be shocked or frightened.

"Hell, no," he said. "Not that at all. I don't dislike homosexuals; but hell, I just like you because you are there. And you are what you are. Like I like those cats, though not as much as that, of course. Hell, son, us men got to stick together, right?"

"Sure," I said, now trying to figure out whether I was feeling more flattered or embarrassed.

"Listen, tell you what," he said, lowering his voice in a conspiratorial manner. "You break away from this tour group tonight, meet me at the Big Whiskey, and I'll show you what this town's really like. Just ask for Bill. Everyone knows me around here."

I remember thinking *what an odd name. Bill, like the beak on a bird.* Short, curt, but it somehow suited him. Big Bill, right?

"My name's Carmanthias," I said.

He looked puzzled. "What do your friends call you?"

I looked puzzled. "Carmanthias," I repeated.

"Okay, son. Remember, tonight, Big Whiskey." He abruptly turned and walked away.

When I asked the tour guide what whiskey was, he said in a miffed tone of voice, "If you'd been listening to what I said, you'd already know what whiskey is."

But this time, buoyed up by my experience with Bill, I refused to back down and just stood there staring at him until he gave up and said, "Oh, all right, it's a dangerous drug."

"Like kick," I said, teasing him. I knew good and well he probably wouldn't be up on the latest slang for cannabis.

"What's kick, anyway?" he said, even more peeved.

When I told him, he said, "Not even slightly like cannabis. It's dangerous and addictive. It can lead to violence and even crime. I'd stay away from it if I were you."

Right at that moment, when I realized that yes, I was going to try whiskey, a thrill coursed through me and I thought, *We men got to stick together; and I heard myself saying: "But you're not me."* I think I was even more shocked than he was. The poor man just muttered lamely, "Well, thank heaven for small favors."

THAT NIGHT, WHEN I'D FINALLY BROKEN FREE OF THE TOUR group after a prolonged dinner, complete with a lecture on the local food and dining, etc., and was heading out into the glowing plastic labyrinth toy that was Spretzel by night, in search of the Big Whiskey, something that had been nagging away at the back of my mind but hiding from the light of consciousness bobbed up to where I caught ahold of it.

Spectacular as the women here were, I had noticed as the day wore on that mostly what you saw was men. Big flashy muscular men and cats. And that's what was bothering me. It was a small thing, but... Even though Spretzel was clearly a city of dominant males, all of the cats and the pretty pastel colors and the look of the city seemed feminine to me. That was what had been bothering me. It was like seeing a big muscular male in a bedroom with pink curtains and bedspread, if you know what I mean. It just did not mesh.

It took me a while to find the Big Whiskey, so I had quite a while to resolve the problem. But couldn't, of course. It was not that everybody I asked didn't know where the Big Whiskey was, it was just that Spretzel had such an elaborate construction that it was hard for me to follow directions. And also, most of the males I questioned were already obviously intoxicated on something

*The whole city
was constructed
out of squares of
opaque plastic...*

or other, probably whiskey. As Bill was to point out to me later on, "The man who isn't sober during the daylight hours isn't much of a man. But a man who isn't drunk by midnight has been wasteful with the precious night."

Anyway, when I finally found the place, it wasn't that much of a surprise to find that it was full of men. Big, brawny, rowdy men. I wasn't surprised, but I couldn't help but feel disappointed. Had I, I wondered, read into Bill's invitation the hint of sexual adventure?

"Hey, everybody," he shouted. "It's my new little friend from the planet Wrath, or something like that. Let's drink to Carmanthias... Carma... What did you say your name was, son?"

"My name is Carmanthias, but my friends call me Son," I said. I got a hearty round of mingled laughter and applause for that one.

What you had here at the Big Whiskey Club was a long circular bar with a footrail running around it. Big brawny men posed in insolent postures all along it. Everyone was patting everyone else on the back. Everyone was laughing and drinking whiskey. There were a few chairs and tables scattered about, but no one was using them. The thought *a man stands on his own two feet* ran through my mind. I was already getting to a point where I didn't even need to ask.

"Goddam, it's good to see you, buddy," Bill said, holding out a little tiny glass of what must have been the drug. "Toss it right down quick, like this." He gulped his down, screwed up his face into a positively anguished expression and twitched all over and said: "Whooo—that's great stuff."

I gulped the stuff down, practically gagged at the horrible taste. Then it came back, burning a path from my stomach up through my chest and throat. It was quite a shocking experience, changing so rapidly from painful to pleasant that by the time I realized how sweet the warmth in my chest had become, it was over with. Still, I was left with a mild tingle, a slight giddiness, and my cheeks felt hot. "Whooo—that's great stuff," I remembered to say.

Bill laughed and patted me on the back. "Like getting hit with a hammer and then jerked off," he said. I felt too embarrassed to ask him what "jerked off" was.

Whiskey made me bold. "Great place," I said, "but where are the women?"

Bill looked puzzled. "Where they belong," he said. "You don't want your woman in a place like this. You want your woman at home."

"Don't they get—uh—bored?" Perhaps whiskey made me too bold. For a moment Bill looked as if he might just get mad, which, I intuited, was probably a spectacle I did not want to witness. No, if Bill was anything, he was a good-natured man. He flashed his familiar confident smile and said, "Well, of course they get bored. But that doesn't last. A nice shopping trip with a friend, or maybe just a little bit of the magic of making love, and they're happy as birds again, singing around the house, keeping everything clean and pretty. God bless them!"

I drank to that. And drank again. After a while I felt dizzy but buoyant; weak but invincible. Adventurous. I wanted to drink more, more and then more. But to my astonishment Bill put his hand over my glass.

"Time to be heading home," he said. "Tell you what, little friend, you're coming home with me."

When I protested, Bill insisted. "No, I won't take 'no' for an answer, you're coming home with me. Besides, my woman wants to meet you. I told her all about you, little friend, and to put it frankly, she's kind of curious. Come on, it's not far from here."

Yet it seemed far to me. An endless drunken journey through an exotic and beautiful city. Where, everywhere I looked, cats

peeked out at me, preened, clawed, stretched, ran, climbed, fought, and danced the cat dance of life in all of its sensuous glory. And then, in some seemingly unconnected manner, we were in his house.

"Neena," he was shouting. "Where the hell is that woman? Look, little friend, you wait right here while I go check a couple of places. She's probably at her friend Leela's. You know how it is. I must have told her at least a thousand times not to go wandering around after dark, but she just won't listen."

I sat down cross-legged on the low couch and waited nervously—for what. I was not quite sure—while he went out to fetch his woman.

Off and on, I forgot where I was, or what I was doing there. I remember once when I had somehow in my drunken stupor connected it to the cats (for yes, there were cats in Bill's apartment, several of them), I came to and found myself talking to one of the cats as if he (or was it she?) owned the apartment (as in a way he did). The beast was regarding me with great, green glowing eyes as if indeed it understood every word I was saying. But the beast yawned, as if it understood but was bored. When I realized what I was doing and broke off, embarrassed, the creature excused itself with a polite meow and its tail popped up straight; it turned and walked away.

But the shock of it seemed to have woken me up a notch or two. Just then Neena made her entrance. "Hi," she said, "I'm Neena." I felt my heart pounding in my chest.

"Where...Where's Bill?" My voice was hoarse.

"Bill's gone off with his drinking buddies," she said. "That scoundrel's gone for the night. Guess that gives you and me a pretty good chance to get acquainted," she added, smiling slyly.

I felt as though I badly needed to swallow but couldn't. What the hell was happening here?

"I guess I ought...I ought...I ought..." I said.

"Don't you dare even think it," she said, in that husky soft voice of hers. "Bill would be furious with me if I didn't make you feel at home. Relax, I'm going in the bedroom for a moment. I don't want you to see me like this," she said, fussing with her lustrous hair with one lovely hand. She slithered by me and through a doorway.

Get up and run away, leave, go, desist, I told myself, *before you have a heart attack.*

She came back through the doorway and spread her arms. She was naked. "I want you to see me like this," she said innocently.

I AWOKE IN THE MIDDLE OF THE NIGHT, OR EARLY MORNING. The room wasn't as dark as rooms I'm accustomed to sleeping in—several objects scattered around glowed softly, night lights. Here and there, cats' eyes glowed among them. Night lights. I pulled the sheets down off of us. She did not waken. For a long time I lay there propped up on my elbow, just looking at her. The silky spill of breasts, the pouty lips, the majestic sweep of female flesh, the smoky triangle. A low purring generated from somewhere in the room. She shuddered in her sleep. I leaned over close to her and breathed in deeply her musky scent. Licked her shoulder, tasted the salty rich taste of her. She smiled briefly in her sleep. Then I got up, softly, quietly, and dressed in the dark, watched by the glowing eyes of cats, and sneaked out in the night.

Of course I'm not going back again, I told myself. Obviously it means trouble. I'm not going to betray Bill, if that's what was going on. But what exactly was going on here? That was the biggest reason in the world to stay clear of it: I hadn't the slightest idea what it was that was happening to me. What did I care if Neena was the most beautiful woman in the world, which she was! She meant trouble and that should be enough for me.

Her eyes were as large and green and glowing as the cats.

But of course I was not really surprised to find myself entering the Big Whiskey the very next night. Not surprised, merely terrified. When I saw that big Bill was there, it was what I had most hoped for, it was what I had most feared.

But his expression upon seeing me was one of such obvious open joy that my emotions changed to anticipation and glee at what it was that I was daring to anticipate. One thing which should have solved the problem, which would certainly have prevented it before my visit to this weird backward little planet, was my lack of courage. But courage was

no longer hard to come by; it was readily available here.

"Whiskey for my friend," Bill shouted, reading my mind again. Soon, sitting at one of the little tables, away from the crowd, Bill was telling me a story, a story which even heard while experiencing the euphoria brought on by the whiskey was simply too good to possibly be true. I'm sure I was just sitting there listening to him with my mouth wide open, mumbling from time to time, "huh," trying to believe it. Wanting to believe it. What the hell. "More whiskey!"

Bill, it seemed, had been planning to go away for a couple of days. But he'd been putting it off for Neena's sake. He had been afraid she would get bored and get herself into some kind of trouble. But now, since she had had so much fun with me last night, it seemed like the perfect time for it. If I would agree to stay with Neena, that is. Keep an eye on her.

"I just want to be by myself for a while," he said. "Think about the meaning of life. You know, like whiskey, beautiful women, stuff like that. Get my system of values straight in my mind. Didn't know I was a philosopher, right, little friend?"

The last thing he said to me as he got up to leave was, "Just remember, sometimes you just got to be stern with her, put your foot down. Let her know who's boss. Otherwise she's liable to screw you to death."

Then he simply walked away, leaving me with my mouth probably hanging down to the table.

One more whiskey to fortify my courage, but a very quick one, and I was off to my lovely, lovely Neena. I almost couldn't find the place. I stopped to ask one of the big brawny men the way to Bill's and he smiled, stood back, looked me over, and simply said: "Follow your desire."

So I finally found it; and miracle of miracles, she was there.

"I want to be your slave," she said.

"Bring whiskey," I said.

It's strange what whiskey does to time. Of course that's not the right way to put it, really, it's the mind that whiskey affects. Is the mind time?

Things just went on and on, drifting in a pleasant golden fog, sound track supplied by the purring of various cats. "Don't you just love them?" she said, lying there naked on the plush blue carpet, stroking the furry ecstatic creatures. I'll never forget the picture of her, as drunk as I was. Her eyes were as large and green and glowing as the cats'. They reminded me of something, something familiar yet different. You are my cat, I thought.

I don't know when it started to change, being drunk and time all messed up into chunks and bits like that; I don't know if it was the whiskey or her or me or what. I remember vomiting. But it was not like really being sick, it was like someone else vomiting. "Here, take these," she said. I remember the two little white pills in her hand, was that before or after the vomiting? Then I remember feeling better, feeling great, feeling wonderful, but nervous somehow. Realizing that now I could drink more whiskey, have more sex.

And now it was urgent but somehow distant, cold sex. Like watching someone else having sex. I had to keep reminding myself it was me.

Headache. What was that bitch nagging about now? Breakfast? What the hell did I care about breakfast? On the other hand, at least it wasn't sex. Didn't she ever get tired of sex? The purring of cats? It was all she wanted to do, all she wanted to talk about. Breakfast: it was some morning or other. It dawned on me, making my head ache even more and I had not thought *that* possible.

BREAKFAST—WAS IT THE THIRD OR fourth day of my visit to this lovely and hospitable little planet? Good God, I had to get back to my tour group now. I got up on my feet. Everything swam.

"Damn it, woman, where are my pants?" She couldn't hear me. Of course, she was in the kitchen preparing breakfast.

"Where are my pants?" I said in a slurred voice, stepping over cats to get through the main room to the kitchen.

She turned around to face me; she was holding a long, sharp knife in her hand, with which she had been slicing bread. Her eyes gleamed wickedly, like a cat's eyes, but she didn't say anything, she just stood there naked, barefoot, holding a knife. I'll also never forget that sight as long as I live. It struck me that she looked very much like some 3-D version of an ancient priestess preparing for a human sacrifice: the goddess of cats?

"Put that knife down," I snarled.

She took a step toward me.

"What do you want your pants for?" she asked innocently.

"What the hell do you think I want my pants for?" I said, just then noticing them draped over a kitchen chair. Always the neat little housewife, she must have picked them up off the floor and tossed them there for me.

"I don't know why in the world you would want to know where your pants are, sweet man of mine," she said, "because you're not going anywhere."

"I said, put down that knife, woman." But I was backing up. Still holding the knife, she followed me into the main room.

"You're not ever going to leave me alone in this house with nothing to do again. Do you hear me? Never again."

"Bill," I mumbled, "what about Bill?"

"That bastard's gone for good. He's not ever coming back. I won't let him, don't you see? It's going to be you and me from now on, just you and me and the cats. I've got plenty of uni-coin, no one ever starves here. We'll send out for food, I'll be your love slave, we'll never have to go outside again."

I saw my chance, edged sideways, and suddenly darted around her and back into the kitchen. I grabbed up my pants just in time to look back and see her come flying through the doorway in a rage, slashing at me with the knife. Luckily for me, she was using an awkward overhand style, and I was able to get my arm up with my pants in my hand and block the attack. But we bashed heads and my arm was cut. Since I was smaller, I got the best of the head-butt situation, catching her hard in the nose.

We both grunted, and I heard the clatter of the knife as it dropped on the kitchen table. Now we both fell backwards onto the table, her on top, naturally, and she doubled up the fist that had held the knife and punched me hard on the side of the head.

"Bastard!" she screamed. I was trying to hold her head back from me; she was trying to bite.

"Bastard. Bastard. Bastard." I felt something hard and sharp with my left hand. She hit me again, harder. The room swam.

Panicked, I pushed out at her with both hands. I forgot about the knife. I swear I forgot about the knife.

Suddenly she stood up and backed away. She put her hands to her stomach. Her brilliant green eyes were wide with awe. "You've stabbed me," she said, still backing up. She backed on through the doorway into the main room again. I heard a cut wowl

*Somehow,
in some totally
unimaginable way,
she changed.*

as she stepped on it. Shaking so hard I could hardly hold the knife, I followed her. "I didn't..." I stammered. "Oh, my God, I didn't..."

Apparently mistaking the horror in my eyes for anger, she said, "Oh no, please don't. Wait a minute. Please don't. Wait. Wait a minute."

She reached up and put her hand to her neck. Whether she was feeling for some kind of switch or just her pulse, I don't know. I didn't want to know.

"You don't understand—Here."

She changed. Somehow, in some totally unimaginable way, she changed. And this

was the part that disturbed me most of all about the process. It started up one side, I am positive it was the left, and then continued in an orderly process down the other. So at one point, one terrifying point when I was just finally able to grasp what it was that was occurring, one half was the body of a woman, the other half the body of a man, which crumpled and fell. By the time I got there, the change was over.

"See," he said, "It's just me. It's just your buddy Bill!" He was holding his stomach, bleeding—too much.

I ran to the communication panel on the wall and scanned the emergency buttons. For a moment I panicked when I couldn't read the writing, then I saw the smaller uni-symbols underneath and pressed for emergency hospital.

"You've gotta forgive me, son. I'd never do anything to hurt you, never. It's just the woman in me. I can't... I can't control my woman. She—she just—once she... she won't stop. She wants to take over everything. Everything!" He was barely whispering now. "Everywhere." His eyes were closed, but now he opened them once again, and at last I recognized what I had recognized in Neena's eyes.

"Don't cry," he whispered. "Just kiss your old buddy good-bye and get the hell out of here!"

I leaned down and kissed him lightly on the lips.

"Go on," he said, "I'll be okay. They'll be here any minute now. If you don't get out now..." He closed his eyes again. But he was still breathing. I pulled on my pants. And he was still breathing when I left him there. And I hope and pray that he's still breathing today, maybe out having a whiskey with the boys, or...?

WHAT HAPPENED TO YOU?" THE SNUFFY TOUR GUIDE SAID. "Do you realize... My God, let's get you on the ship, where we can get you to one of our doctors."

"I'm all right," I said, but I was bloody and bruised and still crying.

"Damn you, why didn't you tell me that every big brawny man here had a woman inside him?"

"I thought that was obvious," he said, smirking as usual.

It hit me so hard I must have staggered, because he caught hold of my shoulders to hold me up.

"I'm sorry, I was just joking," he said. "Of course I covered that, if only you had listened to..."

Then I did something I had never done before. I struck him. I guess it's one of those things you have to practice to get good at, because he didn't stagger or go down. But still, it was hard enough to hurt the knuckles of my right hand.

He stood there with his hand on his cheek, just looking amazed.

"What did you do that for?" he asked.

"That was for my friend Bill," I said and turned away. But then I saw how maybe I wasn't looking at things quite right. So I turned back around and smiled through my tears and hit him again. And apparently I was learning something, because this time he went down. Oh, he didn't so much fall from the force of the blow as he just sat down to get the hell out of my reach. But down is down.

"And that one's for my friend Neena," I said. □

THE COST OF STYXITE

Continued from page 47

to me. The memories will be there when you manage it. Somehow I think you will manage it, human. Your plans couldn't always be bad. You are, after all, still alive!" The xavel fell silent.

20 Geth's remark about his plans hurt, and Devon thought 20 Geth's plan seemed close to suicide. But a glance at the holotank showed that there were few choices left to them. He walked to the control panel, 20 Geth following slowly. "I don't like this, 20 Geth, I don't like it at all. But you're right, autopilot wouldn't fool any decent pilot. I wish you could ram them and take at least one of them with you, but I think it's rather unlikely they'd let you get away with something like that, and even if you did, there would still be enough wreckage left that they could tell that I wasn't aboard." While he spoke, Devon was playing the buttons of the control panel like a master pilot, filling the bank of screens with figures and diagrams.

20 Geth remained silent.

Finally Devon hit a hexagonal white button, and a dashed brown course line appeared in the holotank. "Fox. There's the course, and the data you need to fly it." He stepped back, letting the xavel assume his place at the panel. He began putting on a vacsuit, pausing before he sealed the helmet. "Goodbye, my friend." He tried to think of something more to say. "We had some good times, huh?"

"I wouldn't remember, Devon. Goodbye. Good luck. Evade the slimerats and make a lot of money. And get in that escape pod, before the ejection window goes by."

Devon picked up two of the styxite bricks and shoved them in his shoulder pouch, then crouched down and entered the pod. He sealed his helmet and waited. It seemed like a long time before 20 Geth gave the word. "Now!" He reached across with one hand to pull the large red handle. With a loud crackle, glassy foam squirted up around him, solidifying instantly, until he was immobilized in a big fuzzy ball. Then he could feel the jerk as a jet of compressed gas shot him out into space. The ball rotated as the sensors locked onto the planet, and there was another jerk as the re-entry rockets kicked in.

The escape pod was small enough that it might not be noticed by the chasing ships. To further confuse the trail, after Devon ejected, 20 Geth made a close pass by Kynidal, then by Taber, ejecting another capsule to confuse the pursuers. He then headed out of the system.

As the pod entered the atmosphere, the foam burned away, slowing the pod down. Finally it was moving slowly enough that the tiny computer decided it would be safe to deploy the drogue chute. When the

drogue had slowed it down to subsonic velocities, the last of the foam broke away and the main chute opened. Devon hung from the chute, looking down on the twilight surface far below. At last he spotted the lights of a city. He steered the chute to land him near, but far enough outside that he could hope his descent might go unnoticed.

It was just after dark when he landed, but the bright sister planet Taber made it still easy to see. He was standing in an



empty field, city lights glowing on the horizon. He gathered up the red plastic parachute material, crumpling it into a small ball which burned with a clean, crackling flame. He warmed his hands against the chill of the advancing desert night and glanced skyward, though he knew that there was no way he could possibly be able to see the *Snake Eyes*.

Finally the fire flickered out. Devon kicked dirt over the remains and began to walk toward the lights of the distant city. Maybe he could find a place to hide; maybe he couldn't. The styxite he carried represented a good amount of cash, but it also represented danger, since they would surely be looking for a human with an unaccounted-for amount of styxite. But they couldn't look everywhere, couldn't be everywhere. If he got off-planet quickly and converted the styxite into something else of value, he could probably survive.

While Devon walked, worrying about escape routes, 20 Geth hardly thought at all. Every circuit of his being was focused on the problem of carrying out his assignment—his last assignment. He looped the *Snake Eyes* out from Taber, heading for the moonworld that trailed the couplet worlds in a Trojan orbit. Using the mainplanet for a gravity sling, he then aimed out for the edge of the system, the wolf pack of chaser ships still in pursuit.

Far from the primary was a small gas giant. 20 Geth headed for it at maximum acceleration. The *Snake Eyes* shot by a moon and went into the shadow of the giant. As it passed out of sight of the pursuing ships, he initiated a braking burn, using all of the remaining energy. The ship streaked down, deep into the atmosphere, tumbling and burning through the multicolored sky.

Moments later, the pursuers arrived. Their scanners showed the subvorian as undisturbed, with no sign of their prey.

There was no way to guess whether *Snake Eyes* had tried to escape into nullspace, impossible close to the planet, or had miscalculated a gravity slingshot and burned in the atmosphere, or perhaps had managed to find a hiding place on one of the moons. One ship headed further out-system to grid and report. The others began to try to eliminate the possibilities.

THERE WAS NO CEREMONY AT ALL, NO GOOD BYES. "Now or never," said the laconic pilot over the intercom, and Devon ejected. Strange, until that last voyage of *Snake Eyes*, Devon had never ejected from a spaceship in his life, had never even known anybody who had. Now he was doing it again. But while he had found a fringe-runner who would take him through the system, he could not persuade him to land. The pilot had refused to consider even pausing for a shuttle pickup. "Heard rumors about people landing on that planet. None about anybody coming back, though. WideSky, you call it?"

WideSky, the cause of all their misfortunes, a planet he heartily wished he had never convinced 20 Geth to decide to land on; its gravity pulled solid against his parachute, its air bitter in his lungs. It was ironic, the last place in the galaxy he would have thought he would want to go back to, yet here he was.

Devon—who called himself Lin now; the name Devon he had abandoned when he landed on Kynidal—was wiser now in the ways of escaping attention and traveling where the authorities couldn't see. But still it had taken all the bricks he had brought with him in the escape capsule, a lot of dealing in favors and in the underground identity markets, the claim and location of the styxite load they had found, and a great deal of luck. But where else could he go? He knew that he couldn't travel from planet to planet asking for Lostsouls, of whom xavels would not speak and who other beings didn't know existed; not and stay hidden.

The wymol city had not changed since he and 20 Geth had left it, but it seemed to him to be larger, more forbidding, more alien. He didn't bother to burn the parachute this time. Let the wymols find it. Let them wonder.

There had to be things that even renegade xavels must need. He could deal. The hostel would be a good place to start.

He felt unreasonably cheerful.

And there, in the city ahead. Was that the flash of a xavel carriage? The same one, or a new one? It didn't matter.

Surely there must be fortunes to be made on WideSky for a clever enough pair. It was rich in styxite! A smuggling operation to the League. . . . He'd have to ask 20 Geth, just as soon as he found him a body.

One thing at a time. He shouldered his pack and walked into the wymol city. □



The spectacle of a crowded marketplace in the city of Proctook, after which the splendor of all human cities must pale. INSET: The boundaries of secluded Dinotopia, within which humans and dinosaurs have found peace.

Award-winning illustrator James Gurney visits a land that time forgot.

DARWIN OF DINOTOPIA

BY GEOFFREY MANN

JAMES GURNEY HAS SEEN A BETTER world, and he wants us all to join him there.

It's a world where dinosaurs live peacefully side by side with humans, a place where people can fly through the air on the backs of great winged lizards, an up-until-now hidden island so magically wonderful that no one who has visited there has ever left.

It is—Dinotopia!

In 1862, biologist Arthur Denison and his son Will embarked upon a voyage of exploration that was meant to rival Charles Darwin's famed expedition on the HMS Beagle, during which that earlier scientist developed his famous theory of evolution by natural selection. It was a voyage from which the Denisons were never to return. Their



details of the two Denisons' fabulous journey to this strange and beautiful world was uncovered.

Dinotopia (Turner Publishing, hardcover, 10 1/2" by 9 11/16", 160 full color pages, \$29.95) purports to be a reproduction of the elder Denison's illustrated journal of their travels through a land where people and dinosaur live in peaceful interdependence.

As happens so often when civilized man first approaches the unknown, the Denisons at first felt threatened. Near tragedy struck when Arthur Denison, in a misguided attempt to protect his son, attacked a dinosaur by hurling a heavy rock, wounding a hog-sized iguana. They were immediately circled by a horde of

creatures whom most thought had not walked the earth for 65 million years.

Astonishingly, and to Denison's good luck, the dinosaurs proved to be more forgiving than man and did not counterattack, but rather led the pair on to their utopian world. It is a world populated by yet other shipwreck survivors, brought to safety by dolphins, as well as their many descendants, who have learned to make a home here among the ancient ruins and gigantic lizards. According to what Denison learns, no one stranded on the island of Dinotopia has ever left, but whether that is because no one is able to leave this paradise or because no one can leave remains unexplained.

Denison and his son travel throughout the land to 10 major cities, each with its

schooner *Venturer* was blown off course and the pair was shipwrecked. They were never heard from again and presumed killed.

It wasn't until James Gurney happened upon the elder Denison's notes and sketchbook over a century later while doing research in a university library that the



ABOVE: The gentle dinosaurs cooperate among themselves to outwit the carnivorous Tyrannosaurus Rex. *RIGHT:* A *Muttaburrasaurus* bearing a message-rider. The small *Dinopoda* can memorize short messages and deliver them as needed. *FAR RIGHT:* The skies of *Dinotopia* belong to the clan of *Skybax Riders*, soaring aloft in the ultimate example of dinosaur/human cooperation and trust.

own unique customs and architecture, and see the ecological harmony which has been created here, with different dinosaur-human teams responsible for the management of sky, forest, beaches and so on. In the course of their journey, they visit the most miraculous of places, the sort which most of us have only been fortunate enough to see in dreams.

We are first shown a hatchery, where humans cooperate with dinosaurs in the breeding of their young. Children keep watch over the dinosaur eggs and even use dinosaur puppets to make sure that the new-born hatchlings imprint on the proper reptilian-faced mother. And the dinosaurs provide help for the humans as well, with the smaller species acting as nannies for the overworked human parents.



We are witness to the Dinosaur Olympics, where dinosaurs, ridden by teams made up of a young man and a young woman, compete to capture rings of particular colors, much like the jousting days of old. Except that here, the event is not so much for competition but to instill the spirit of cooperation between the species.

Perhaps the most tantalizing creatures on *Dinotopia* for many of us are the *Skybax*, the majestic winged creatures who allow humans to ride on their backs. On *Dino-*







topia, those with proper training are allowed to live out their dreams of flight as they fly with their partner through the skies, delivering news and medicine around the secluded island.

But in addition to being the story of these wonders, *Dinotopia* is also the story of the maturation of Will Denison, who is toughened from boy to man during the course of his journey across the world. The book, in fact, has a message for all of us as we struggle through our own difficult world. The Code of Dinotopia is one by which it would be useful for all of us to live, as the following excerpt shows:

"Weapons are enemies, even to their owners. Give more, take less. Others first, self last. Observe, listen, and learn. Do one thing at a time."

AS FANTASIZING AS THIS ALL SOUNDS to dinosaur fans who wish that *Dinotopia* truly existed, in actuality we shouldn't contact our travel agencies just yet. For as sad as it sounds, it is James Gurney himself who has created this most delightful work, and as he tells us, it is a work of fiction.

"Ever since my parents first set me in a sandbox," he says, "it has been my dream to create a world. I wasn't interested in just a pretty looking castle, but a whole world, complete in every detail—so real I could step across some magic threshold and disappear into it. For me, *Dinotopia* is the answer to that dream. I don't think of it as a fantasy world to escape to, but rather as a real world to participate in."

Gurney has succeeded in accomplishing what his ambitions set him out to create. He has built a world for all children who populate tabletop dioramas with toy dinosaurs and all grownups who can still remember being those children. Which basically means, a world for all of us.

Gurney's background proves him to have been preparing all his life for such a venture. While pursuing a Bachelor of Arts in Anthropology at the University of California, Gurney assisted at the Lowie Museum of Anthropology by making exact drawings of Egyptian artifacts. The ability to do such detail work has served him in good stead here, which can be seen in many of his drawings which depict the ancient carvings of the dinosaurs' ancestors. Gurney later pursued his dream of combining real and



imaginary worlds by painting backgrounds for the animated feature film *Fire and Ice*. He continues to be a frequent contributor to the *National Geographic*. Convention-going science fiction fans will be familiar with Gurney because of his Best of Art Show win at the 1989 World Science Fiction Convention.

Other publishers have announced new books, hoping to capitalize on the dinosaur craze. Some of these may be equally as beautiful as *Dinotopia*, but none will likely have the special qualities of innocence, magic and sense of wonder that make James Gurney's heartfelt work so delightful.

For Gurney, *Dinotopia* is the culmination of a lifelong dream. For the rest of us, Gurney has brought the dream alive. □

LEFT: At the *Dinosaur Olympics*, Will Denison competes atop the temperamental Deinocoelurus. **ABOVE:** Within the oak forest of Treetown, a family of massive but gentle Brachiosaurus are treated by the humans to a gift of turnip ferns.



THREE DAMNED KNOTS. CASSIE HAD BEEN ASSIGNED these 10 knots—basic knots, her teachers called them—during her first year at the Institute. She'd spent five years trying to tie them. She'd mastered the daunting physics and math, gone through hundreds of engineering problems—all that was left were these damn knots. Maybe knots had applications in gate technology, string theory, or plain old survival on a hostile planet—but come on: what were the chances of a gate tech ever needing to know how to tie a carrick bend? Wasn't that what glue and zippers and nano were for?

Besides, she could not get the knack of the thing.

Cassie had a vision of being called to the front of her class by that prim Dr. Bradley and asked to show everyone a carrick bend. Of the class starting to snicker as she fumbled with the rope. Then, as she really made a mess of it, there would be a growing chorus of guffaws and heckling until Bradley, with his brassy, nasal voice, would put an end to it. "Well, we aren't all meant to become gate technicians, Cassie," he'd say, his tight-ass face full of sympathy. "There are plenty of earthside jobs for those who can't tie their own shoelaces."

Which was, of course, something much too direct for Bradley ever to say. But if being a gate tech required tying carrick bends and Turk's heads, Cassie was damn well going to learn how to do so, if she had to strip her fingernails off in the process. Final screening was in two weeks. Two weeks to learn these damn knots.

She fumbled with the rope again, sighed, and looked down at the lap of the water against the pilings. At least she was down at the docks. Giant, earth-bound Seattle was at her back, with its rolling blossom of habitations and offices, altered daily by a billion billion nano construction bugs, its overlapping tethers shuttling elevators of commuters up and down from orbit, the lightning blink of the big cargo gates. Crowded, cluttered old Earth. Behind me, thought Cassie.

Puget Sound stretched before her, churning and rippling, yet somehow placid. She'd always liked the Sound; it reminded her of space—at least of how she imagined space to be. Like the reaches between the stars, she thought, full of twisting, braided emptiness, with a few hydrogen clouds, spume on the waves. Her hands fell slack as she let the autumn air blow hard against her face, through her hair.

"Your ears are as red as little tomatoes," said a man's voice. It was scratchy, yet resonant. Cassie turned to face the speaker.

If ever a voice matched its owner, this was the time. The man was lean and tall, yet a trifle hunched. But his posture looked natural, as if he had leaned forward into the wind so long that standing up straight would throw him off balance. A sailor. Had to be. He held out an old black watch cap to her.

Cassie shook her head, smiled politely.

"I'm fine, thanks."

"Take it."

He dropped the cap on her shoulder and she picked it off to give it back. Her ears were cold, though, and the watch cap seemed clean enough, the worst holes sewn up with careful stitching. She slipped it on before she realized that this was, of course, an invitation for him to sit down. She stared at the rope in her hands. Knots. Think knots.

Cassie had to decide between the green hills of Earth and the frigid beauty of space. But what if she made the wrong choice?

ALWAYS FALLING APART

BY TONY DANIEL
Illustration by Michael Hill

"I was, uh, watching you for a while," the man said.

Cassie was about to shoot him a reproachful glance, but she noticed his wince.

"No, I mean, the knots. The knots. It's a lost art nowadays, even for us fishermen. I'm Walt Griffith, by the way."

She took his hand tentatively, but he tightened his grip into a firm handshake. Walt Griffith, indeed. The name sounded like some bit of sailor's jargon the way he said it. "We can't stop the breach, cap'n! 'Certainly we can, ensign; hand me the Walt!'"

Cassie met his gaze for a moment. She had expected eyes green like the sea or blue like the sky—but they were brown. She returned to fumbling with the rope.

"I wish it were really a lost art," she said.

"Oh, no, you don't mean that. Knots are wonderful. They're... they hold the secret of the universe."

"Uh huh."

"Let me see that marline," he said. Cassie had no idea what he was talking about. He pointed to the rope. She handed it over.

"A square knot," he said, "is the perfect union of form and function. Look at this. Two loops holding one another and being held. It's like a quatrain in a sonnet; you can use a knot or a poem over and over again for all sorts of jobs."

Cassie was interested despite herself. Anyway, the guy might be useful.

"I can do that one fine. Can you show me a carrick bend?"

Walter looked to Cassie like a man who had just been handed a fortune and didn't know where to start spending it first.

"I can teach you to tie any knot you can name."

And he could. It still didn't come easy for Cassie, but Walt had so many tricks, so many ways to remember to make this loop there, this turn now, that within a couple of hours she was an old hand at the 10 knots she'd been assigned. When, between the second and third loop of a sheep shank, he asked her to go for coffee, she surprised herself by accepting, and by making her knot as nearly perfect as Walt's.

The coffee shop was in about the same condition as Walt's watch cap. The coffee was organic and brewed, rather than nano-processed. The place seemed friendly, and the old lady who brought their coffee so obviously knew Walt and was trying to act like she didn't that Cassie's polite smile became a big grin as soon as the woman turned her back.

"Mrs. Tooley doesn't see me with company very often," said Walt. "She thinks I'm lonely since I'm usually alone in here."

Cassie couldn't decide if she wanted to know more about him or not. Interesting people could quickly become distractions, and distraction meant failure at the T.M.I. But what the hell. She had hardly thought about anything but school for over a year now, since she'd made it to the fifth form. Maybe opening her mind a bit and considering something that had nothing to do with gating would make her more competitive in class.

"Are you lonely?"

Walt considered this for two sips of coffee.

"I have a ship," he said, finally. "She's an old fat boat, but I love her. We fish."

"Don't they have farms for that?"

"But I sell my fish to the health nuts—people like me who think they can tell the difference in taste between wild and brot-raised."

For a moment, Walt looked like he would go on with his description, but then he shrugged and stopped talking. He took a long look over his raised cup at Cassie, steam rising as his breath passed over the cup's rim.

"Trying to decide if I'm wild or broth-raised?" she said.

Walt's complexion was too ruddy to redden further, but Cassie suspected his face was warming rapidly. What do I do? she thought. End it with a flourish, or give way? For some reason, her normal killer instinct just wasn't taking charge tonight.

"Creature of the broth, I'm afraid," she said, staring into her cup. "Transportation Ministry Institute. Studying to be a gate tech."

Walt accepted Cassie's lifeline. He didn't seem to be a man who stayed embarrassed long.

"Very tough to get in, I hear."

"Very tough to stay in. Lots of competition."

He stifled a laugh, as if he'd thought of something, but caught himself before it got out. Then he said it anyway.

"Guess you're pretty close to wild then."

"Too much to deal with tonight, thought Cassie. She got up.

"I have to go."

"I'm sorry," said Walt. "I didn't mean anything."

"No, it's just that I have to study. I have final screening in two weeks and . . ." Giving away too much unnecessary information is a sign of weakness. Need-to-know basis only—it had got her through school so far. "I've just got to go."

LOWE, CASSIE THOUGHT, IS THE CONTRACT TWO SETS OF CHROMOSOMES make with one another to share information using their attendant superstructures. To be, for a time, exclusive. Biochemical epiphenomenon. No, that wasn't right. The screening. Think about the screening. Basics. Bellair's Principle of Asymptotic Returns. Don't call it Bez Limit on the test. Time and energy logarithmically proportional to molecular complexity and systemic integrity of the transducer. Translation: don't take your time and spend the eggs when gating organics, what you get at the other end doesn't last long. Can you really make a living being a fisherman?

This has got to stop.

She'd forgotten plenty of other men in less than a day. Why couldn't she forget about Walt in two? And she had that damn rope in her hands again, unconsciously working in and out of square knots, sheet bends—and making hitches around her knees. The secret of the universe indeed. Addictive, that's what they were. Not good for her studies. Was she really that starved for affection? Walt had called and asked for her this morning while she'd been in class. Said he wanted his watch cap back. Was she that scared? Not Cassie Stewart. Cassie Stewart was bound for the stars. She feared nothing. She started dialing the number Walt had left. Was she self-destructing at the end? She'd been warned that some students did that. Dial the damn number.

They went out on his boat that Sunday. It, "she" he called it, was gorgeous and wooden. "Hard in the keel, soft in the transom is sweet *Jenny Lee*," said Walt. Whatever. But his brown eyes glistened when he talked about her. They went fishing. She'd told him she liked mackerel, mostly because she couldn't think of any other kind of fish. Meals at T.M.I. were broth-generic, and she scarcely remembered, or wanted to remember, her life before school, much less what kind of fish she'd eaten. Walt wasted no time with vain circlings about in the ocean; he called up the satellite, located the nearest shoal of mackerel, and headed for it.

"So that's how you make it pay."

"Fishing? Not really. Barely pays for my fuel," said Walt. "My time I give free, 'cause it's not really work to me. Broth fauna is cheaper, easier and, arguably, better for you. Grows strong astronauts."

He pinched her bicep when he said it, and Cassie realized she didn't mind. She walked up to the prow and let the wind take her hair. Earth could be pretty nice. Sometimes. In some places.

Soon, Walt joined her up front, with a thermos of coffee and

an extra cup for her. Coffee and Walt were never too far apart, it seemed. They drank and watched the Sound, as the ship plowed through the small swells.

"Shouldn't you be driving or steering or something?"

"Oh my God!" shouted Walt. Then he broke into a rich laughter. "No, don't worry. *Jenny Lee's* patched into the Sound navigation net. But what's there to run into? All the non-organic bulk stuff is low-rez gated, so there's no cargo carriers anymore. Most anything with quality worth preserving is flying north to where it's wanted, or gated high-rez, if it's expensive enough. Just old cranks and crazies sail the seas, and we're few and far apart."

He paused a moment, took off his cap and scratched his head.

"I've always wondered, and nobody in, well, authority talks about it much—isn't gate transfer just sending information? Why does the person on the sending end of the gates disappear?"

Cassie considered. Not the standard group lecture response. Not for Walt.

"They die," she said. "For the exact copy who gets materialized at the receiving end to have complete integrity, the Bellair matrix computer has to know everything. To know everything—the exact interconnections, the synergies—requires a little Maxwell's demon program in the matrix that analyzes everything, everything there is to know. That's why high-rez is so incredibly expensive. Your body has to be torn apart, atom by atom."

"Grisly."

"No, it's painless and instantaneous."

"What about if you're going to send someone low-rez. . . ."

"Which is only done under strange circumstances."

"Does the person at the sending gate stay alive?"

"Yes, but the copy who arrives doesn't last long. Organics are funny like that. Some reason they can't low-rez decent wine and store it. After even a few weeks, it disintegrates. Organics are more than the sum of their parts, and the internal relationships can't be maintained. Not unless you kick in the matrix demon."

"So there can be, for a little while, two of exactly the same person. Then the low-rez one will disintegrate?"

"So close no human can tell them apart—until the one on the receiving end starts to disintegrate. And they will. Faster or slower, depending on how much went into the sending," said Cassie, with a look of satisfaction. Explain gate-theory to a mature lay audience. That would be a question at the screening she was sure.

"Why do you want to do it, Cassie? Be a gate tech, I mean."

"To go to the stars."

Walt took a long pull of coffee, slurping a little at the end of it. He looked away, out over the Sound.

"That's not good enough," he said. "Look at this place, Cassie. Sure, living on Earth can drag down your spirit, but look at this. Feel it. You can live here."

Cassie did not reply. What was there to say to such a thing? She knew the answers. In less than two weeks, she'd quote them verbatim at the screening. And she knew the real answer, she thought. But how could you put a lifetime of hope and longing into one sentence, one thousand sentences?

They did not make love that evening, which somehow disappointed Cassie. She'd stayed late, drinking coffee, then long beers from Walt's ice chest. Evening descended upon the Sound like a falling veil, settling in stages. The sun angled down fiercely, then unbecomingly, then was gone behind the Olympics, except for the red and orange wash of its wake. She could get used to this place. She spent the night in the deckhouse, bundled in an army sleeping bag. God knows how old, but without mildew and smelling only faintly of salt water. Walt stretched out in his battered deck chair just outside; he seemed to merge with it, fit him so well. Cassie fell asleep with the rock of the waves and the sound of Walt's quiet snoring in her ears.

Cassie cut classes the next morning. She knew she should be outraged at her self-indulgence, or at least surprised at such a strange and sudden change. Had into a princess? Or the other

way around? But all she felt was contentment. She hadn't felt this way in, well, a long time; she did not want to let the feeling go. Walt woke up before she did and was hauling from the shore, when she told him to turn *Jenny Lee* around and head for deeper water. He studied her for a moment, smiled, then did as she said.

The ship had a head, with a little shower. This would make for a perfect morning, Cassie thought: a hot shower in the cold Sound and so that you turned to the shower head like you would to a campfire in the mountains, alternating delightfully between cold and hot. But Walt had not told her that there was no water heater. The shower water was freezing cold. She burst out, scrubbed clean, red and shivering, and dragged Walt to her sleeping bag. He'd flipped the wheel to the side when she grabbed him, and the boat began a long, lazy circle.

"It's been a long time, Cass. A very long time. I . . ."

He tried to be gentle but she wouldn't let him. She pulled off his clothes when his fumbling took too long. Cassie made love with a fierceness that surprised her. Was she that hungry, empty? His body was warm from layers of clothing and who knew how many cups of morning coffee. She rubbed hard against him, thinking she'd never get warm. After a while, Walt caught some of her ferociousness—or at least began to feel the long absence of sex. They came at one another in surges. Like the *Jenny Lee* plowing through the Sound, thought Cassie. Afterward, they lay tangled in the sleeping bag for a long while, Walt's head under Cassie's chin. It took her a while, but she finally identified what he smelled like: rope, manila rope, glazed with the oil from long use by human hands. Like her marine.

They sailed the Sound and Walt took in what he figured was a good catch within about three hours of trawling. Cassie realized she wasn't going back to school that week. She'd known that perhaps since morning. If the years of work she'd put in learning about the damn gates were not enough, then she wouldn't be able to pass the screening with a week's worth of cramming.

Walt took her to his favorite places, with the same eagerness and earnestness with which he'd taught her to tie the knots. They spent the nights anchored in little coves that had few people in the summer, and hardly any now that the cold autumn winds were blowing in off the Sound. They made love in the daytime, mostly, with the deckhouse door thrown open, for who was there to see? The fierceness of their coming together did not let up, but was tempered by a growing knowledge of one another, a willingness to give in the right places, at the right times. Cassie was growing accustomed to the Sound, too: the rhythm of weather and water, the roll and jag of the coast. She saw her first mirage one day and was filled with delight—an upside down ship, impossibly elongated, plying the overcast sky.

"Walt till you see the Northern Lights," Walt said. "The Aurora Borealis in winter. There is nothing like it."

Cassie hadn't answered. She had to tell him soon. Friday morning, before sunrise, they lay together on the deck watching the stars. The stars, thought Cassie. I'd forgotten the stars. Here, away from city lights, the sky was crowded with them, like a green-grocer's shelves, freshly restocked for the week, flowing over. Walt was half-sitting, with her head on his chest. He had his coffee beside him and occasionally took a swallow.

"Sometimes, when the Sound is dead calm," he said, "and the sky is like it is tonight, you can look across the water and there is city there, a star-city. Imagine living in it—only existing in the spaces between the wind's gusting."

Yes, Cassie thought, I know what that feels like. And now the wind's coming up again, Walt.

"After the T.M.I. final screening, Walt, you don't stay around. They gate you out that day, those that pass."

"Are you going to pass?"

Cassie thought about it. He was asking more than one question. Could she answer them both?

"There's not a chance I'll fail."

"I see."

He returned to gazing out, drinking his coffee.

"I want to go," said Cassie, "because out there, I can do something real."

"This isn't real, Cass?"

"I'm a cog, a data bit, here on Earth, Walt. Me and about six billion others. Everything we do is just a contribution to some statistical pattern, some bar on a graph. I grew up in a generic habitat, in the middle of a generic Midwest city."

"Chicago?"

"It doesn't matter, Walt. They're all the same. Big. Confusing and confused." She gestured at his star-city. "If nothing else, there are fewer people out there. More of a chance to be a person, a Cassie."

"I'm not a drop in a swell, Cass, or some no account city barnacle. I just am not."

"Of course you're not, but don't you see you've chosen to be outside, separate? This is a wonderful life, but what does it mean? What will it mean to . . . the universe? You don't teach anyone else to tie the knots."

"I taught you. My life means something to me."

"Yes, you are happy. My dear captain, I could be happy here, too."

"Then stay with me. Stay, Cass. Marry me."

He was half out of the sleeping bag now, holding her head in his hands. Brown eyes looking down at her, manila brown, sparkling with starlight. Starlight.

CASSIE BATTERED THE FISH WITH FLOUR—CORN FLOUR FROM Derry Brown's anachronistic farm up in a cove near Bellingham—and set it to frying in the cast iron skillet. She'd learned how to brace pots and pans against the swells only last week, when Walt had shown her the ins and outs of the *Jenny Lee*. He seemed to know just the questions she would ask, but of course that was to be expected. Walt looked so old now, but that, too, was to be expected. And he'd aged gracefully, as an old rope will, until it finally unbraids. They sailed the Sound, visiting all the old places, the favorite places. They always did this when she came, Walt had told her. With a few moments to wait for the fish to brown, Cassie came up on deck. The effort was taxing. So soon, she thought, so soon. If only desire could hold the universe together. Everything was always falling apart. Walt was at the prow, leaning into the wind, working a bit of line into a carrick bend.

She still remembered how to tie it—she'd had practice over the years. You could use knots in almost any situation—the Institute had been right in requiring her to learn them: on metal-poor worlds where rivets and screws were prized commodities, on lifeless worlds where organics—and so glue and plastic—were rare. Nano was expensive, and transferred almost as poorly as organics. So she was often left with ingenuity and knots.

Walt let the knot fall slack as she put her arms around him.

"Does she . . . do you still love the stars?"

"I never did, Walt. I'm doing something that matters."

"How long until you . . ."

"It's starting now," Cassie said.

"Every time you get sick . . . and die again, I . . ."

He looked so forlorn, but she was glad, so very glad, to be here with him.

"I'll probably be able to afford another transfer in about a year," she said.

She kissed one of his ears, blew on it against the cold.

"I've still got your watch cap," she said.

Walt did not reply. He turned back to looking over the Sound. Finally, he spoke.

"Are you happy?"

And could she twist her soul into a carrick bend and bind herself to the universe with a fierce necessity? Cassie's heart said no. No. There was nothing to hold on to, to tie up to. No ends. Only love and space, and the brittle stars.

"Always here," she said. "Always with you, Walt." □

UFO

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SCIENCE

Continued from page 27

mism is "inevitable," and the New York Yankees were "unbeatable."

Based on current progress, I believe that Nanotechnology in its pure form will be upon us in less than a decade, with autonomous molecular machines and nano-scale electronic devices capable of "impossible" tasks like artificial eyes, spinal cord re-wiring, real-time universal speech translators, ring-size supercomputers, and neural system interfaces.

For all their small size and high-tech aura, atomic-scale devices have been receiving national political attention. The report of the National Critical Technologies Panel in Washington, D.C. in 1991 stated that "Research may also lead to the production of nanoscale mechanical devices and sensors."

In June 1992, in recognition of his reputation as a pioneer in nanotechnology, Dr. Drexler testified before Senator Albert Gore's Senate Science, Space and Technology Committee.

Obviously impressed by Drexler's vision of non-wasteful, non-polluting, completely "green" manufacturing, the Senator requested a formal investigation of nanotechnology by the Office of Technology Assessment (OTA), the technical investigative branch of Congress. A 1991 OTA report, *Miniaturized Technologies*, had already presented a two-page summary of the status of nanotechnology. The controversy over Drexler's views was mentioned, but the report also noted that little written criticism existed within the technical journals. The OTA survey ended with the conclusion that "The earliest prediction for development of protoassemblers is five to ten years."

Given that nanotechnology—molecular manufacturing in Drexler's terminology—becomes a mature process in the near future, what other wonders are we likely to see? In 1950, Feynman showed mathematically that with nanostorage "...all of the information that man has carefully accumulated in all the [24 million] books in the world can be written... in a cube of material... one two-hundredths of an inch wide—which is the barest piece of dust that can be made out by the human eye!"

Recent reports suggest we are on the verge of storing terabits (thousands of megabits) in 1 square millimeter of semiconductor, or all of Feynman's 24 million volumes on a credit-card-sized chip about one thousand times bigger than that speck

of dust. The rest of the way down is just a matter of time...

One of Dr. Feynman's dreams was suggested by his friend, Dr. Albert Hibbs "...although it is a very wild idea, it would be interesting in surgery if you could swallow the surgeon... it goes into the heart and 'looks' around... and takes out a little knife... Other small machines might be

permanently incorporated into the body..." It is interesting to note that in 1991, Japan's MITI organization proposed a Micro-machines Project with the United States in which they envision exactly what Feynman and Hibbs described in 1959—"smart pills" containing microbots to cure what ails the body.

Drexler and other writers predict atom-grabbing, molecule-stacking assem-

blers that arrange carbon atoms into space-ships of diamond that chomp up chlorine molecules to save the ozone layer and, in general, clean up the whole Earth.

So what else is there for science fiction writers to extract from mature nanotechnology? Quite a bit. In 1983, for example, Greg Bear's *Blood Music* foresaw intelligent nanocritters inhabiting the human body. In their *Assemblers of Infinity*, Doug Beason and Kevin Anderson envision alien nanomachines building an embryonic colony on our Moon. My own SF stories feature household vermin patrol-bots, in-body cocaine-killing nanobots, personal defense systems, personal offense weapons for assassination, on-board implants for enhancements of human talents, induced telepathy via on-board radio implants, and even painless nanodontics (for your teeth).

Science fiction dreams or nightmares aside, we all are on the verge of a new industrial revolution, possibly exceeding in importance the discovery of fire or agriculture. If anything, history shows us that the effects will be infinitely more interesting than merely changing our definition of a factory. To paraphrase the conclusion of a recent Japanese government paper on new technologies, "In the 21st century, the most significant social problem will be 'What is a human being?'"

There is a symmetry in those seven blue Xenon atoms, in that new atomic mountain range built with and pictured by the electronic senses of the Scanning Tunneling Microscope. There is also a sense of completion, one more accomplishment to be linked back to Dr. Richard Feynman's brilliant leap into the future. He had said, "When we get to the very, very small world—say circuits of seven atoms—we have... completely new opportunities for design."

Dr. Feynman, we are getting very close. And you were very right. □

The year is 1995, and Mayfair Games invites you to join the Legion.



A new sourcebook from Mayfair Games provides role-players a guide to the 30th century world of DC Comics' Legion of Super Heroes.

THROUGHOUT THE HISTORY OF SCIENCE FICTION AS a genre, its greatest challenge has been to believably portray the future. The farther in the future, the greater the challenge, which is why most science fiction is set in the near future. The very near future. "Technology we can expect by June." Since 1958, the scripters of the DC comic book *The Legion of Super Heroes* have faced the challenge of trying to depict a galaxy 1000 years in the future.

Now the comic's current writers, the husband and wife team of Tom and Mary Bierbaum, have brought their vision of Earth's 30th century to 1995: *The Legion of Super Heroes Sourcebook*, a supplement for use with Mayfair Games' *DC Heroes* role-playing game. I read 1995 eagerly since I have been a fan of the Legion for longer than I have been role-playing, and I have been role-playing for 14 years.

"What is role-playing?" some of you just asked. Remember when you played war or house as a kid? Role-playing is the adult version of those games. There are no winners or losers in role-playing. Each person assumes a persona to play for an evening (or months or years depending on how much everyone enjoys themselves) in an imaginary world prepared and administered by another person, the game master.

The game's rules serve as a framework to judge the characters' chances of succeeding in the things they

want to do. For instance, if the person who is playing Element Lad decides that he wants to punch the villain Lobo (who is being played by the game master), he compares his dexterity to Lobo's. The player then rolls dice to see if he actually did strike the villain. If the blow lands, the player then compares his strength to Lobo's body to see how badly Lobo is hurt.

Role-playing products come in three flavors. There are rules sets, which set forth how the games will be administered. There are scenario packs, which set forth a specific set of characters and events for the game master to lead the players through. And, there are sourcebooks, which provide characters and back-grounds to allow the game master to create his own scenarios in a specific fictional world. 1995 falls into this last category.

For Mayfair, getting Tom and Mary to write the *Sourcebook* is the equivalent of Putnam getting Frank Herbert to write *The Dune Encyclopedia*. By their own admission though, the Bierbaums have "chosen to stress personalities over data." Fans of the comic book will relish the histories of and the anecdotes about the Legionnaires, many of which have not yet appeared in the comic. Role-players will be frustrated by the lack of details about the 30th century itself.

The Legion of Super Heroes is the longest running team title in comic books. The Legion first appeared as a throwaway plot in the *Superboy* comic, three teenage members of a "super hero club" from the future (Lightning Lad, Cosmic Boy, and Saturn Girl) who had journeyed into the past to meet their inspiration and idol. Fan response kept the heroes from the future coming back until they finally pushed *Superboy* out of his own book.

Thirty-four years of monthly comic books is a lot of history. Through the magic of comic book time, only 22 years have passed for the characters since the Legion's founding. Five of those years passed all at once, when the Bierbaums took over writing the book in 1989. It is those five "off camera" years and what has happened since that the *Sourcebook* is about.

The *Sourcebook* is organized into seven sections, led off by a bare bones time-line of Legion history and capped by an eight page summary of the Legion Galaxy and the planets in it. In between are the listings for all the Legionnaires (in order of joining) ever to serve. There are also listings for the Legion's villains and supporting cast, but only for those who are concerned in the current Bierbaum stories. Thus, while you will find a listing for the bounty hunter Lobo (who appeared in the comic only as a robot duplicate), you won't find a listing for longtime Legion villain Tyr (or any of the other members of the Legion of Super villains), even though he appears in the time-line.

The listings for each character contain his name, his DC Hero statistics (the dexterity, strength, and body

Continued on page 72

1996: The Seeds of ARMAGEDDON



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DC launches a new line of graphic novels with an *Enigma* worth unravelling.

The Enigma, a masked force for good in a world gone bad. Or is he?
Art by Duncan Fegredo.



I DON'T KNOW ABOUT YOU, BUT WHEN I READ COMIC books as a kid, I would always dream about how wonderful it would be if I could step into the pages of my favorite comic book, or if my favorite characters could step outside into the real world with me. But when it came right down to it, how wonderful would that really be?

That's one of the questions asked and answered by *Enigma*, the 8-issue maxi-series that DC Comics has chosen to launch its new Vertigo line of mature comics meant for a more sophisticated audience. "We've always been committed to putting out the smartest, best-looking and weirdest comics available," said Karen Berger, group editor of the new Vertigo line. And with *Enigma*, at least, they appear to have succeeded in their goal.

Enigma is the latest creation of Peter Milligan, writer of *Shade*, the *Changing Man*, and Duncan Fegredo, artist of *Kid Eternity*. Having created something new and different, DC wants to make sure the news gets out, so they're putting their promotional force behind this series, with banners, a poster, buttons and other attention-grabbing devices to make sure there's no way the comics-reading public will miss this strange new series and the new line it is meant to introduce. If this first series is any indication of DC's future plans for Vertigo, the line should be a winner, and a boon for thinking adults.

When Michael Smith was a small boy, his mother left him on a street corner, a copy of his favorite super hero comic *The Enigma* clutched in his tiny hands. "Just wait there for me, you hear?" she said, and he sat on the curb, the streetlights blinking on around him.

She never came back.

And Michael Smith's childhood dreams became populated with that man in a mask and a cloak who was his mysterious friend, the hero named *Enigma* who seemed to stand by him when his mother did not. Eventually, those dreams faded, and he became an adult, in body, if not entirely in mind. For inside, Michael Smith had been warped by the experiences and disappointments of youth, and so he has found himself stuck in a dead-end job, willing to settle for less than life had to offer, unable to make commitments to those he thinks he loves.

"What's the point of you, Michael?" he keeps asking himself. He never has the slightest idea how to begin answering that question.

Then one day, the super heroes came back, into the real world. And they were not alone. For if there are super heroes who manage to break from the pages of their four color world into our own, won't there also be super villains?

Those are the first to return, including the disgusting creature the public has dubbed the Brain Eater, who confounds the police department when they find a load of corpses whose brains appear to have been sucked out through their noses. But this fanatic is not in it for physical sustenance alone. It turns out that his name is really *The Head*, and what he is stealing is more than meat—he is stealing the memories, loves and passions of an entire life. When Michael Smith tries to rescue a helpless victim he almost becomes a victim himself, until *The Head* peers inside Smith's mind and discovers some terrible secret which causes him to flee before whatever cryptic mystery he sees.

The creators of the *Enigma* have populated this world with a surreal bunch of super humans, including *The Truth*, who can make people see themselves the way we always say it would be wonderful to have happen. If only we had the power to see ourselves as others see us, goes the poem. But those who are granted this boon by *The Truth* discover that his gift is more nightmare than dream. And then there's the bizarre *Interior League*, who creep into homes and rearrange the furniture in such a way that it drives at least one of the members of the household crazy.

Standing against these surrealistic villains is the *Enigma* himself, who appears once more to battle *The Head* and *The Truth*, much as he did in Smith's childhood comic. The masked man is somehow tied to Michael Smith in a, shall we say, *enigmatic* way as yet unrevealed to us. Michael's girlfriend Sandra is convinced that it's all one big hoax. "Some nuts start aping the super villains from the comic," she says, "and someone else, probably an even bigger nut, starts aping the super hero." But Michael is sure that there's got to be more to it, that these heroes and villains are real, sprung through his mind from the pages of his favorite comic book.

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Michael tracks down Titus Bird, the creator of the comic book *Enigma*, in Texas. The artist/writer has turned into a recluse, attempting to hide from a worldwide cult that has risen around his creation. They call themselves The Enigmatics, and start worshipping the old comics as sacred texts, and Bird as a guru. "My own characters come to life to get me," he tells Smith. "I should have been nicer to them." Michael discovers that he has a link with the creator of the comic, and leaves his girlfriend to embark on a journey of self-discovery that he hopes will not only save the world, but also tell him whether his life itself is worth living. At one point, "Michael tries to imagine what it would be like not to exist, but can't. Though most other people find it very easy to imagine Michael not existing." One of the subplots is the story of Smith's search for a reason to simply to be.

Michael believes that the super heroes and villains have sprung from his own brain, and that it is up to him and the creator of the comic to figure out how to bring it all to a conclusion that won't destroy the world in the process. They go back to the original comic for clues, but unfortunately, the episode in which *The Enigma* was to save the world was in the fourth issue of the comic within the comic, which never appeared. They are on their own.

Enigma will appeal not only to already existing comics and science fiction fans, but also to those who would surely like to read comics if they only gave them a chance. The characters who populate this book are adults, albeit messed up adults, with adult problems, and the book looks unflinchingly at all of them as the story passes, sexual, metaphysical and otherwise.

The multi-layered plot, in which Michael Smith seeks to not only save the world but save his soul, will be of interest to more than just those already converted to the notion of comics as an artform. It is not meant to be a slam at the artwork when I state that this could have been written text-only and marketed as an adult novel, for the artwork that illustrates this tale is as strange and surreal and worthy as the story told. What this simply means is that *Enigma* is one comic which has risen above its peers and attempted something new and different and thought-provoking, working on cerebral levels most comics ignore.

Though we have only seen the first four of the issues in this maxi-series, we are sure that this is one *Enigma* worthy of decoding. The first issue of *Enigma* will be on sale in January at comic specialty shops, with a retail price of \$2.50.

OTHER COMICS OF INTEREST

This seems to be Howard Chaykin's year, which turns out to be a good year for science fiction as well. Chaykin was one of a generation of young comic book artists entering the field in the '70s who, along with others brought a much needed dash of style and panache to a decade that needed it.

Now, two of Howard Chaykin's early projects have been reborn as major S.F. publishing events, coming from both Marvel's Epic Line and DC Comics.

The first of these is *The Stars My Destination* (Epic Comics, trade paperback, \$21.95), adapted from the Alfred Bester novel of the same name. Bester was a pyrotechnical wizard of words in the S.F. world of the '50s, when his book *The Demolished Man* won the first Hugo Award for Best Novel in 1963. This graphic novel adapts Bester's second novel, which is arguably one of the 10 best S.F. novels ever. Space-wrecked dweller in the 25th century Gulliver Foyle and his telepathic jaunting about the galaxies in search of revenge captured the attention of Chaykin and scripter Byron Preiss in the late '70s, when Alfred Bester himself gave the pair his blessing to proceed on what was one of the comics field's first graphic novels.

If you were around in 1978, you might have caught the first half of *The Stars My Destination* put out by Baronet Publishing, which unfortunately went belly-up not too long after its publication. The artwork for the second half of the tale spent a decade in a warehouse in Queens, New York, until it was finally rescued to be put before our attention as it was meant to be. Think of it as *Classics Illustrated* for S.F. fans.

It's been two decades since Howard Chaykin's Ironwolf appeared, the fallen Lord who fenced on far distant worlds and spanned the planets in his spaceship made of anti-gravity wood, the *Limerick Buke*. Chaykin has returned to his roots in Ironwolf: *Fires of the Revolution* (DC Comics, hardcover, \$29.95). This time around though, instead of trying to do everything, he's enlisted a little help from his friends, co-scripter John Moore and artists Michael Mignola and P. Craig Russell.

Teamwork pays off, as Lord Ironwolf slices his way through the Empire Galactica to topple a corrupt royalty that is keeping his planet enslaved. The foursome doesn't try to imitate Chaykin's style, but the heroic Chaykin flavor is still there.

Each of these books proves that good things are worth waiting for. You should be able to find them in finer comics shops.

S.E.

ESSAY

Continued from page 22

first time in my life. I still remember the delight of finding myself on a sofa between Robert Heinlein and Leigh Brackett back in the 1940s at my first World S.F. Convention.

Conventions have changed a lot since I was 18, just like the rest of the world. For instance, a big disillusionment came with the 1969 moon landing. In all the times the science fiction world had predicted it, nobody had guessed that it would be carried all over the world by live television. And nowadays it is taken for granted that a woman who marries will work.

When I first started writing a woman writing science fiction was looked on—in the old phrase of Dr. Johnson—as like a bear walking on her hind legs. It was enough that she did it, you didn't expect her to do it well. This attitude, of course, may have helped me to get started in science fiction, but I honestly don't think so.

It's not enough to be a woman these days; you also have to tell a good story. But you no longer have to be better than nine-tenths of all writers. It used to be taken for granted that any story by a female writer would be head and shoulders above the mass of stories. Now a woman is allowed to be as mediocre as most men—and judging by the manuscripts I get, all too many



Ms. Bradley on a convention panel with H.S. Santesson, left, and Gahan Wilson. Photo by Jay K. Klein.

of them are. Excuse me if I don't consider it much of an improvement.

But my major loyalties—and I'm still willing to admit it—are to fandom. I can still find something to interest me at every convention I attend, even though in the mass of game fans, comic fans, TV watchers, *Star Trek* fans, and a few readers, I can no longer assume that almost everyone I meet will know who I am, or care... and certainly not that he or she will be an instant friend.

Back in the old days, I used to think, wouldn't it be wonderful if there were a convention every week or so, so that I could see my friends more often? Now there is, literally, a convention every week, and I frequently get invited to them. But I will only go to smaller conventions.

Most of the big ones are just about seven thousand people too big. □

THE FROG WIZARD

Continued from page 37

Which is just as well, as he had no wish to have any more transformations on his conscience.

"...And that's the tale," the stranger told the officers of *Glory of Summer Dawn*.

Kwan and the others laughed politely, not believing a word of it. Captain Kai nodded his acceptance of the story, and then waved for a tray of after-dinner sweets.

Just then the ship lurched as a wave tugged it against its anchor chain. The cabin servant, a younger man not yet fully accustomed to the sea, stumbled; he fell against the stranger, and the entire tray of confections spilled into the old man's beard, leaving it awash in cream and honey and fruited syrups.

The stranger leapt to his feet, a hand raised in a peculiar gesture. Kwan looked up, startled, and saw the confusion in the white man's eyes—he had acted without thinking, from reflex, surprising even himself, Kwan was certain.

When Kwan looked down, the servant was gone, and a large frog blinked up at him from the cabin's carpet. Kwan stared for a long moment; beside him, the white man let out a long, low sigh.

Across the table, Captain Kai whispered, "And he can defeat whole armies thus! What a weapon this could be, in the emperor's service!"

"I knew it," the old man said, in the most miserable voice Kwan had ever heard. "Even here. I'll never be safe as long as I..."

Kwan looked up as the words stopped, just in time to see the old man gesture again—at himself.

Then there were two fat frogs on the carpet. Kwan and the captain stared at one another.

"I think," Kai told his lieutenant after a long silence, "that if we can't provide the emperor with a mighty wizard to transform his foes, at least we might enrich his menagerie by an amphibian or two."

Kwan nodded. "And," he said, "it will give the emperor's own magicians something to do—to attempt the restoration of these two unfortunates."

Thus it was that two ordinary frogs came to be the most pampered creatures in all the emperor's collection—two, because the sailors had lost track, before reaching port, of which frog was which. Both seemed quite content with their lot.

And that was why, for years thereafter, every new magician to arrive at the imperial court was required to spend a day in fruitless experimentation at the frog pond. □

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GAMES

Continued from page 66

mentioned above, plus mental and mystical ratings, plus descriptions of the character's super powers), and a brief biographical background for him. The remainder of the listing consists of a record of the character's activities over the five last years. These histories are told in the form of letters, news articles, diary and journal entries, government reports and haikus.

This first person style of delivering background is a technique that the Bierbaums have brought over from the Legion comic book. Fans of the comic who enjoy these first person accounts there will like them here. Role-players trying to quickly discover some fact in the middle of a gaming session (as when in the course of an adventure, we needed to know what year Cosmic Boy left the Legion to join the Bral army) will be frustrated.

There are some good moments in the listings. For instance, Dream Girl, a precognitive from a planet where everyone has at least some precognition, receives a letter from home thanking her for accepting the office of High Seer before she has actually decided to do so. "We have foreseen your decision..." Of course, by using this device, Tom and Mary have taken half a column to give the reader a fact about Dream Girl that could have been set forth in a sentence.

Thus, the *Sourcebook* is interesting reading, but a pain to use as a resource. Returning to the Cosmic Boy example, it took me a page and a half of reading to discover that the date of his resignation is not in his listing. I had to go back to the timeline in the beginning section to find out that he resigned from the Legion in 2985. There is no listing for when he joined the Bral army.

Happily, there is no problem finding the individual statistics for the characters who have been included in the *Sourcebook*. Batman, Superman, and the other DC super heroes are such a part of our culture that one of the original selling points for the *DC Heroes* rules set was that it quantified their powers and characteristics. Superman, for instance, is strong enough to move the earth, and if he pushes himself, he can move the sun. (His statistics say he is invulnerable enough not to be burned, but they don't tell you what he is pushing against.)

The *Sourcebook* will let you see that Brainiac 5 really is the smartest hero in Galaxy, that Superboy can out arm wrestle Ultra Boy, and that most of the Legion of Substitute Heroes belonged there. More

interesting though are the biographies, most supposedly written four years after the Legion's founding. The biographies give you the character's homes, ages, hobbies, and so forth, but stylistically, Tom and Mary use the entries to attempt to capture the innocence of the original Legion.

As fully developed as the characters are in *Legion Sourcebook*, the same cannot be said of the world. For people who are not fans of the comic, the *Sourcebook's* eight pages about the Legion Galaxy do not begin to give a coherent picture of the thirteenth century. I have been reading the Legion for years, but in trying to run an adventure with the *Sourcebook* as my bible I was frustrated by such questions as "How long does it take to get from the Legion base on Talus to New Earth?" The section on Legion equipment states that the Legion spacecraft can reach any corner of the United Planets in three or four days, a fact which is so vague as to be useless.

What does the Legion's future look like? Back in the 1960s, when the comic's writers and artists first started sending Superboy to the 2900s to visit the Legion, the future he visited looked pretty much like... well, like the '50s. A Buck Rogers kind of '50s, but the '50s.

Thirty years later, the Legion future as told by the Bierbaums looks pretty much like the '80s. There is currently a galaxy wide depression, the Great Collapse, brought on by spend-thrift economic policies which funded a massive military buildup and fashionable "big ticket" luxuries like planetary weather control systems. The Dominion, a competing star empire based on fear and oppression, has recently collapsed, leaving the galaxy's political map in flux. World dictators, like Mordru and Glorith, hatch plots with far-reaching political consequences.

Meanwhile, like their fans, the Legion is getting older. Tom and Mary Bierbaum are both long time Legion fans who met through interiac, an amateur press alliance devoted to the Legion. They are in their mid-thirties and they have a 10-year-old son. Thus it is not surprising that they have allowed the Legionnaires to reach middle age. Saturn "Girl," a founding member of the Legion at the age of 15, is now 38 and a mother of four. The *Sourcebook* refers to her far more often by her given name of Imra than it does by her code name.

Most of the Legionnaires have had experiences that have aged them. A few, like Dream Girl, have abandoned superheroing to become the leaders of their worlds. Like Star Boy, who quit the Legion to get married and manage a baseball team, a few have found things in life that were

more important to them than being a hero. Most, however, soldier on, their youthful idealism replaced by mature purpose. It all makes for good reading, but the people I play with (who are fairly typical of adult role-players) get enough of changing diapers in their real lives. When we role-play, we would rather push planets around.

Another problem I had in trying to run an adventure from 2995 was adapting to the style of the villains. A common complaint about comic books is that their worlds never seem to feel the effects of being inhabited by all these super beings. In the Legion, this is not completely true. Mordru and Glorith (and other villains) rule their worlds because they have the power to do so. They also have the power to defeat the whole Legion in a fair fight.

Thus, game masters used to pulling a villain out of a book for the Fight of the Week are going to find their campaigns over quickly in the Legion galaxy. As in the comic, plots have to be built around defeating the villains' plans rather than the villains themselves. The characters have to be maneuvered into circumstances where their powers are either weakened (so they are actually in danger from the villains' lackeys) or enhanced (so they are actually dangerous to the villains). This sort of plotting would be easier if there were more well organized data about the galaxy itself.

So, there is a lot of wonderful information in 2995. Readers of the comic will find it an invaluable companion to the series. Try re-reading last summer's annual with the Sourcebook at your side; you will be amazed how much you missed the first time.

Unfortunately, 2995 leaves too many gaps for me to recommend it as a gaming aid, unless all of your players are fans of the comic. If you have never dealt with the Legion before, this is not the place to begin. But if you are a Legion fan, *The Sourcebook* will keep you entertained, and its revelations will surprise you.

A GENETIC PLAYGROUND IN YOUR HOME

Maxis, the creative force behind some of the most popular games for the home computer—notably *SimCity*, *SimEarth*, and *SimAnts*—has just introduced the newest member of their Simulated software family. Designed for the Macintosh, *SimLife—The Genetic Playground* allows you to turn your personal computer into a desktop biological laboratory where you can custom design new species of plants and animals.

Once you've used your imagination to create hitherto unknown lifeforms, you can then test their survival techniques against custom-designed environments full of diseases, droughts, floods, and all Mother Nature (and your own fiendish imagination) can bring to bear. You'll watch the process of evolution itself take place as your successful creations become better adapted to their environment.

SimLife comes with a 206-page manual which explains not only the rules needed to play the game, but the basic concepts of genetics, ecology, and evolution as well. Study it carefully—it isn't easy playing God! (But it is fun!) S.E.

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STAR TREK BEAMS INTO LOCAL MALLS

Next year computer gaming reaches the final frontier, for Paramount Pictures has announced that *Star Trek* virtual reality centers will shortly begin appearing in malls across the country.

Edison Brother Entertainment, Inc., which already has a strong presence where America shops with its popular Time-Out, Space Port and Exhilarama entertainment centers, will incorporate software created by Spectrum Holobyte to allow visitors to choose among a number of characters and game scenarios and step inside the *Enterprise* sets. Based on the TV series *Star Trek: The Next Generation*, players will be able to inhabit The Bridge, The Holodeck, The Transporter Room, Engineering and other favorite sets, which will be recreated via the computer magic of virtual reality.

Restaurants and merchandise areas will also be a part of the package, according to initial plans.



An artist's sketch of the *Star Trek* virtual reality entertainment center.

"*Star Trek* has always been synonymous with the ultimate in technology," said Brandon Tartikoff, chairman of Paramount Pictures. "Our agreement with Edison Brothers will, for the first time, allow *Star Trek* fans across the country to actually board the *USS Enterprise* and experience the excitement and adventure of the 24th century today."

The first center is scheduled to open in 1993. Pricing and exact mall locations have yet to be announced.

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CONTRIBUTORS

THOMAS M. DISCH HAS RECENTLY abandoned Manhattan for a home in upstate New York, where he is working on his latest novel *The Priest: A Gothic Romance*. His most recently published novel, *The M.D.: A Horror Story*, has received rave reviews from, among others, Stephen King.

The last time we saw Geoffrey A. Landis, he was smiling. He had recently won a Hugo Award for the Best Short Story of 1992 ("A Walk In The Sun"), voted upon by the members of the World Science Fiction Convention. He is at work on his first novel, which is eagerly awaited by the many fans of his short fiction. Jorj Strumolo is another member of the famed Space Crafts Writers Workshop of Cambridge, Massachusetts, which has provided the S.F. community with many of its newer stars, among them last issue's *Bessie Nelson* and *Damien Kilby*. John Berkey hopes that you pause during your next stop-over at the new Pittsburgh Air Terminal. That's because his 12 foot by 6 foot mural of a city of the future is hanging there to help you pass the time waiting for your next flight. *Painted Space* is the title of his most recent collection of artwork.

Ronald Anthony Cross has tried to touch all bases with his next project—an occult conspiracy thriller trilogy from *Tor Books* to appear in late 1993 under the title "The Eternal Guardians." He is currently at work on yet another trilogy.

J. K. Potter is primarily known in this country for his horror illustration. British fans have been seeing his more science-fictional works for years, and we are pleased to present one of them this issue so that American fans can discover the wider range of his talents.

Tony Daniel's first novel will shortly be published by *TOR Books* in America and Millennium in the U.K. *Warpath* is based on his well-received short story "Candles" about Native Americans transplanted to an alien world.

Lawrence Watt-Evans is best known for his Hugo-winning short story "Why I Left

Harry's All-Night Hamburgers." *Taking Flight*, another novel set in his fantasy world of Ethshar, will soon appear.

Bruce Boston and Robert Frazier have been collaborating for years on a cycle of poems and short stories about the mysterious Mutant Rain Forest. A book collecting these is about to appear under the title *Chronicles of the Mutant Rain Forest*.



M.Z. Bradley



Arlan Andrews

MARION ZIMMER BRADLEY IS one of the few S.F. writers who has created a world—Darkover—with a cult fandom so large that conventions honoring her work alone are held annually. She has provided moral support for an entire generation of fantasy writers.

Eric T. Baker is at work on a novel on virtual reality in a future Iceland. Sharp-eyed readers will have noted that short stories set in this same milieu have begun appearing in the better S.F. magazines.

Geoffrey Munn was first exposed to S.F. while working for the Peace Corps in Thailand where he found a box full of classic Asimov and Heinlein novels left behind by another volunteer. He is currently making up for lost time.

Arlan Andrews recently received a briefing from Dr. K. Eric Drexler himself when he brought the nanotechnology guru in to the White House to brief the White House Science Office on nanotechnology and molecular manufacturing, a governmental first.

Tony Barnett works in advertising when he is not cataloguing his personal comic book collection, which numbers over 23,000 pieces.

Michael Bishop recently completed his latest novel *Brilliant Insurgency*, which mixes the Frankenstein monster with major league baseball. Interest is so high on this one that it has already been optioned for the movies.

Paul Di Filippo says that his newest works are taking a turn from cyberpunk to steampunk, following in the footsteps of many other S.F. writers.



Thomas M. Disch



Michael Bishop

STAR TREK

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